Alternate Paths to SFU

A Comparative Academic Performance Study of B.C. College Transfer Students and B.C. Direct Entry Secondary School Students Admitted to SFU from 1992 to 1999

October 2004

Prepared by:

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Executive Summary

Studies at B.C. universities show that although transfer students perform well at universities, they tend to achieve somewhat lower grades in university courses than direct entry students. The B.C. Council on Admissions and Transfer (BCCAT) wanted to develop a better understanding of this disparity in grades and asked the Office of Analytical Studies at Simon Fraser University to conduct a comparative academic performance study of direct entry secondary school students and college transfer students admitted to SFU. The purpose of the study is to determine whether this difference between transfer students and direct entry students still exists when controlling for secondary school performance.

This report compares the academic performance of two distinct admission groups of students who graduated from a B.C. secondary school in the five-year period from 1992 to 1996 and were admitted to SFU from 1992 to 1999. Each of these groups chose an alternate path to SFU: 7,335 direct-entry secondary school students entered SFU from a B.C. high school within one year of high school graduation (referred to as "direct entry" or "BC12" students), whereas 3,109 college transfer students entered SFU after completing approximately 30 or more college transfer credits in a B.C. college (referred to as "college transfer" or "BCCOL" students).

In this study, secondary school performance (the control), is the overall mean grade calculated for each student on four provincial exam scores (English 12 plus three other grade 12 academic courses with the highest grades). Although this is the best measure available for controlling for high school performance in this study, it is not a "real" measure because it is not used in determining admission eligibility at SFU. Direct entry students admitted to SFU are normally evaluated for admission on the basis of a 40%-60% blend of provincial exam scores and school-assigned grades in grade 12 courses. The blended grades are not used as the control in this study because the school-assigned grades are potentially biased by high school attended. The average high school grade for direct entry students is nearly ten percentage points higher than the average high school grade achieved by B.C. college transfer students (78.33% versus 68.49%). If the high school average grade calculated for this study (based solely on provincial exam scores) had been used for determining SFU admission eligibility, then 77% of the B.C. college transfer cohort and 34% of the direct entry cohort would *not* have qualified for admission to SFU[1].

This comparative academic performance study includes a descriptive profile of the direct entry and college transfer students and an analysis of the differences in overall academic performance and differences in course grade performance. Along with the differences in academic performance between the two admission groups, conclusions are also drawn about two sub-groups of students within each admission category: (a) the *lower high school achievers* or *low achievers* – the group of students who would not otherwise be

[1] BC12 students in this study with average high school grades below 75% (based on provincial exam scores) were in fact successfully admitted to SFU because their blended grades exceeded the minimum 75% admission cutoff.

qualified for university admission, since their high school average grade calculated purely on provincial exam scores was below 75%, and (b) the *upper high school achievers* or *high achievers* – the group of students whose high school average was calculated at 75% or higher.

Regardless of the path chosen to enter SFU, either through college or directly from high school, ***students admitted with the same high school achievement level perform equally well at SFU in terms of:***

- bachelor's degree completion rates,
- early departure rates,
- course grade performance in 400-level courses, and
- course grade performance in other selected courses.

Among the upper high school achievers (students who achieved an average high school grade of 75% or more) college transfer students also performed equally as well as direct entry students at SFU on the following performance measures:

- CGPA on the first 30 SFU credits (2.88),
- CGPA on the last 60 SFU credits upon bachelor's degree completion (3.20),
- university failure rate after completing a total of 30 credits (3.9%),
- average grade in all SFU courses (3.01),
- average grade in 100-level courses (2.90),
- proportion of A and C grades received in SFU courses (30% A's, 22% C's),
- course failure rates (1.6%), and
- the proportion of unsatisfactory grades received (7%).

There are some differences in the academic performance between direct entry students and college transfer students, but primarily for lower high school achievers. These students would not have been admitted to SFU directly from high school if the average grade in selected provincial exams had been used to determine SFU admission eligibility. ***Among the lower high school achievers, college transfer students out-performed direct entry students at SFU on the following performance measures:***

- CGPA on the first 30 SFU credits (2.56 versus 2.40),
- overall average grade in SFU courses (2.71 versus 2.64),
- 100-level course grades (2.62 versus 2.47),
- proportionately more A and B grades received (63% versus 59%),
- lower course failure rate (2.1% versus 3.0%), and
- fewer unsatisfactory grades received (11% versus 13%).

This study shows that the transfer system between the colleges and Simon Fraser University is working effectively. The academic performance of college transfer students is equal to, and sometimes better than, the performance of their academic peers from high school that entered SFU directly. The B.C. college experience is especially beneficial to those students who struggled in high school and ultimately wanted to enter SFU. The college experience can help these lower high school achievers attain higher academic success at SFU than those lower achievers who otherwise gained access to SFU directly from high school.

Key Findings

Some of the noteworthy observations and findings from this study are summarized here. Throughout the study, it is frequently observed that: (a) students with high school grades below 75% (the "low achievers") perform better at SFU if they transferred from college as opposed to entering directly from high school; and (b) college transfer students and direct entry students often performed equally if their high school grades were 75% or higher (the "high achievers"). This may seem counter-intuitive because in aggregate the SFU performance scores are generally higher for direct entry students than college transfers students. However this can be explained by the fact that the overall performance scores for BC12's and BCCOL's are essentially weighted average scores. The weighted average performance scores for BC12's are strongly influenced by the presence of proportionately more students from the "high achievers" group while the overall performance of BCCOL's is strongly influenced by the presence of proportionately more "low achievers".

1) B.C. secondary school entrants were admitted to SFU with a 78.3% average high school grade[2]. This is nearly 10 percentage points higher than the average for B.C. college transfer students at 68.6%.

2) During the time period of this study, the SFU admission GPA cut-off was roughly 75%. Based on the high school average grade used in this study[1], many B.C. college transfer students completed high school with insufficient grades to enter SFU directly. If the high school average grade used in this study had been used for determining SFU admission eligibility, then roughly 77% of the B.C. college transfer cohort would not have qualified for general admission to SFU upon secondary school graduation, compared to 34% of the B.C. direct entry cohort[3].

3) The path B.C. high school graduates choose to complete their SFU bachelor's degree, either directly from high school or through a B.C. college, has no effect on the total number of credits they will complete to obtain their degree. Both groups completed 129 credits upon completion of their SFU bachelor's degree.[4]

4) The mean cumulative grade point average (CGPA) on the "first 30"[5] SFU credits is 2.72 for B.C. direct entry students, and 2.64 for B.C. college transfer students. However, by high school achievement level, we can conclude that: (1) students

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[2] The average high school grade is calculated on provincial exam grades in English 12 plus the best three other grade 12 examinable courses.

[3] Admission eligibility to SFU is based on a blend of school-assigned grades and provincial exam scores. Meeting the minimum qualifications for general admission does not guarantee admission to SFU. Higher entrance requirements, or quota minimums, are usually implemented each year to limit the number of students admitted when the demand for available SFU spaces exceeds supply.

[4] Most bachelor's degree programs at SFU require successful completion of 120 credits for graduation.

[5] This is the cumulative grade point average calculated on the first 30 credits completed at SFU, but these "first 30 credits" have been adjusted for a more direct comparison at equivalent year levels between the two cohorts.

who perform well in secondary school (the high achievers) perform equally well in their first 30 credits at SFU, regardless of the route they choose to enter SFU; (2) students who do not perform well in secondary school (the low achievers) perform better in their first 30 credits at SFU if they attend a B.C. college first, rather than entering SFU directly from high school.

5) Controlling for high school average grade, college transfer students who complete an SFU bachelor's degree perform just as well or better than direct entry students on their final 60 SFU credits.

6) Counting the years from the time of high school graduation to the time of SFU baccalaureate degree completion, the proportion of students from either cohort who graduated is approximately 72% or 73% after seven years. (This proportion is calculated only for those who completed at least 30 credits in total).[6]

7) Among the group of baccalaureate graduates, 62% of those who entered SFU directly from high school completed a credential in the same faculty to which they were initially admitted; by comparison the proportion was 77% among the group of students who entered SFU from a B.C. college. The fact that college transfer students switched faculties less often is likely attributed to these students having an opportunity while attending college to decide what they would ultimately pursue once admitted to SFU.

8) The proportion of early leavers (or students who completed 15 or fewer credits before departing SFU without a degree) was higher among college transfer students (7.3%) than direct entry students (5.7%). However, when we control for high school achievement (lower versus upper), there is no significant difference between direct entry students and B.C. college transfer students in the proportion of students who will leave SFU before completing a half-year of SFU course work.

9) A total of 11% of the BC12 cohort (versus 8% of the BCCOL cohort) were deemed ineligible to re-register in a subsequent semester because their cumulative grade point average was too low. However, among those who completed a total of 30 credits in total, the university failure rates were 8% for college transfer students and 5% for direct-entry students.[7]

10) For all courses combined, the average grade achieved in SFU courses was 2.89 for direct entry students compared to 2.78 for college transfer students (among 169,000 SFU grades for BC12's and 47,000 SFU grades for BCCOL's). This difference of 0.11 grade points is statistically significant. No significant difference was identified for upper achievers in high school. Among lower achievers in high school, the college transfer students out-performed the direct entry students (2.71 course grades GPA versus 2.64).

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[6] Thirty credits in total includes transfer credits and SFU credits completed.

[7] Thirty credits in total includes transfer credits and SFU credits completed.

11) For all courses combined and evaluated by course level, direct entry students achieved higher SFU course grades at all course levels. The only notable exception to this was among the lower high school achievers on 100-level courses, where college transfer students out-performed direct entry students.

12) Upper achievers who entered SFU directly or via college were equally as likely to fail their SFU courses (1.6%); lower achievers were more likely to fail an SFU course if they entered directly from high school (3.0%) than if they transferred from college (2.1% course failure rate).

13) The proportion of unsatisfactory SFU grades (below C) awarded to direct entry students was 8.5%, compared to 9.9% for college transfer students. No significant difference was found among the upper high school achievers, but for the lower high school achievers, the proportion of students with unsatisfactory grades was 12.7% among direct entry students and 10.8% among college transfer students.

14) Controlling for high school average grade, direct entry students and college transfer students performed equally well on 33 out of 65 individual SFU courses (with at least 20 students from each cohort enrolled).

Introduction

Studies at B.C. universities show that although transfer students perform well at universities, they tend to achieve somewhat lower grades in university courses than direct entry students. The B.C. Council on Admissions and Transfer (BCCAT) wanted to develop a better understanding of this disparity in grades and asked the Office of Analytical Studies at Simon Fraser University to conduct a comparative academic performance study of direct entry secondary school students and college transfer students admitted to SFU. The purpose of the study is to determine whether this difference between transfer students and direct entry students still exists when controlling for secondary school performance.

Preliminary Analysis

The Office of Analytical Studies at SFU conducted a preliminary assessment of the problem in June of 2002 for the purpose of exploring the data to determine if further in-depth analysis would be worthwhile. Three basic findings were uncovered in the preliminary report (see ***Appendix A***):

1) Using average high school grades[8] as a comparator, it was shown that college transfer students are significantly weaker academically than students who enter SFU directly from high school.
2) When we looked at the SFU cumulative grade point averages of the two groups, while controlling for the high school grade, it was found that college transfer students performed equally as well or better than direct entry students.
3) Finally, when we looked at the performance of the two groups in specific courses, while controlling for high school grade, college transfer students did just as well as or better than direct entry students.

Based on the three preliminary findings, the B.C. Council on Admissions and Transfer agreed that further analysis and a more detailed report would be worthwhile, but an unbiased measure of high school academic performance should be used. The preliminary analysis included a blend of school grades and provincial exam grades in the high school average. In this analysis, only selected provincial exam scores are included in the high school average.

This report begins with an overview of the study's methodology and then provides three approaches to comparing the direct entry secondary school students to the college transfer

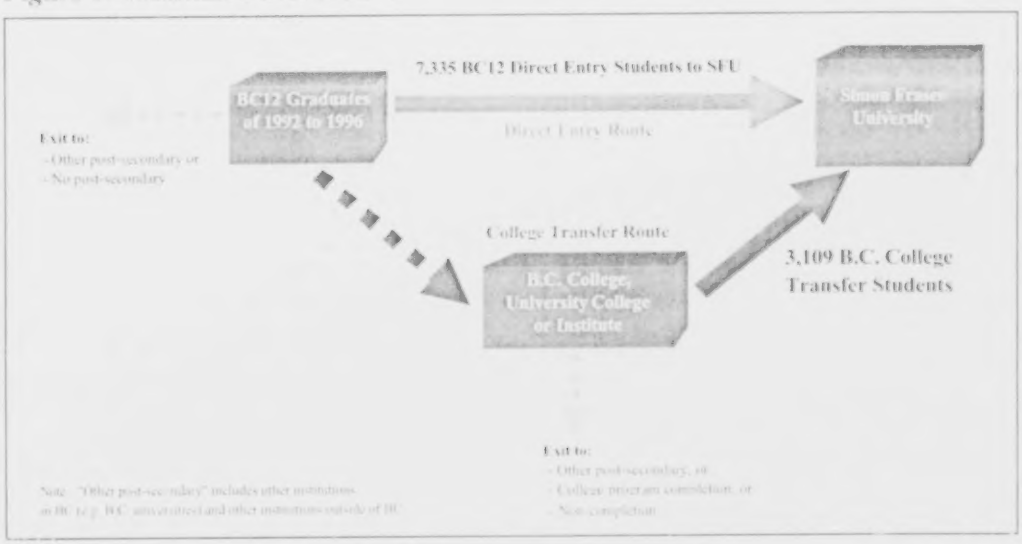
[8] In the preliminary analysis, an overall average high school percent grade was calculated for each student by taking the average of the best three final blended course grades, where: Final Blended Course Grade = (School % Grade + Provincial Exam % Grade) / 2. The final analysis presented in this report uses an unbiased measure for the high school average grade that includes an average of selected provincial exam grades only.

students: first a descriptive profile of the two groups is provided, then overall differences in academic performance indicators are presented, and finally the differences in course grade performance are examined.

Methodology

Cohort:
The cohort for this study consists of 10,444 students admitted to SFU between 1992 and 1999 after graduating from a B.C. secondary school in the five-year period from 1992 to 1996. These students took one of two different paths to SFU: One group entered SFU directly from high school and the other group transferred to a B.C. college before entering SFU (see ***Figure 1***). Specifically, these two groups of students are referred to as *Direct-Entry B.C. Secondary School Students* (also referred to as "direct entry" or "BC12" students) and *B.C. College Transfer Students* (also referred to as "college transfer" or "BCCOL" students).

Figure 1: Alternate Paths to SFU


7,335 BC12 Direct Entry Students to SFU
BC12 Graduates of 1992 to 1996
Simon Fraser University
Direct Entry Route
Exit to:
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College Transfer Route
3,109 B.C. College Transfer Students
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Exit to:
- Other post-secondary, or
- College program completion, or
- Non-completion
Note: "Other post-secondary" includes other institutions in BC (e.g. BCIT, university-colleges) and other institutions outside of BC.

Direct-Entry B.C. Secondary School Students: The majority (70%) of the cohort consists of 7,335 direct-entry B.C. secondary school students who came to SFU without first attending a B.C. college. These students were admitted to SFU from 1992-2 to 1997-2 and entered SFU within one year of high school graduation.[9] The three largest sources of direct-entry students to SFU in this study are Centennial School (9%), Port Moody Secondary (5%) and Burnaby North Secondary (4%). A list of all schools from which at least 1% of students previously attended is provided in ***Table B1 of Appendix B***.

[9] SFU operates on a trimester system, with each of the three semesters in a calendar year are denoted by the four-digit year, followed by a single digit indicating the Spring (1), Summer (2) or Fall (3) semester. For example, 1997-2 is the Summer 1997 semester.

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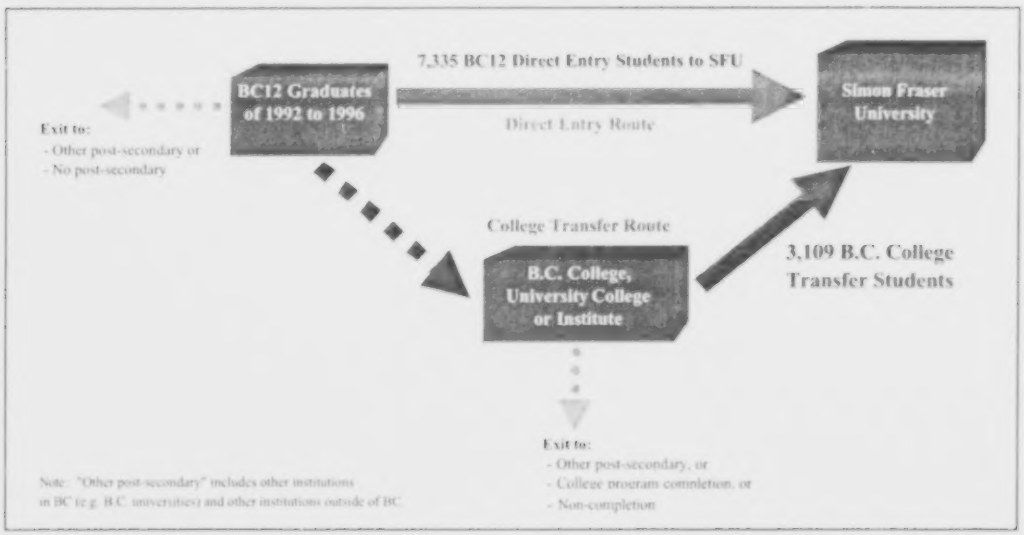
Figure 1: Alternate Paths to SFU


7,335 BC12 Direct Entry Students to SFU
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B.C. College Transfer Students: The remaining 30% of the cohort includes 3,109 B.C. college transfer students who attended a B.C. college after graduating from high school and before attending SFU. (See ***Table B2 in Appendix B*** for a distribution of the college transfer students by secondary school of graduation and college attended). These students were admitted to SFU approximately two years later than the BC12 students, from semesters 1994-2 to 1999-1. By definition, these students are admitted to Simon Fraser University from a B.C. college or institute with a minimum of one full year of transferable work (30 transfer credits or any number of credits from BCIT). In exceptional circumstances, some B.C. College transfers students are admitted to SFU with fewer than 30 transfer credits. Also included in this group are 87 students admitted with a B.C. Associate Degree (BCASD) from a B.C. College. These BCASD students normally have successfully completed a minimum of 54 credit hours and have a minimum 2.00 admission GPA based on transferable courses. ***Table B3 in Appendix B*** provides a list of the twelve colleges (ten public and two private), five university colleges and one institute from which B.C. college transfer students in this study are represented. For each student, the college from which the majority of credits were transferred is referred to as her or his college of transfer. The three largest sources of college transfer students in this study are Kwantlen University College (31%), Douglas College (21%) and Capilano College (18%).

A distribution of the sample cohort by high school graduation year, SFU admission category and SFU admission year is provided below.

Admission Category	SFU Admission Year	Secondary School Graduation Year					
		1992	1993	1994	1995	1996	Grand Total
BC12	1992	1,157	1				1,158
	1993	52	1,184				1,236
	1994		143	1,449			1,592
	1995			125	1,454	1	1,580
	1996				107	1,572	1,679
	1997					90	90
BC12 Total		**1,209**	**1,328**	**1,574**	**1,561**	**1,663**	**7,335**
BCCOL	1994	149	81	1			231
	1995	163	336	90	3	1	593
	1996	126	242	346	81	3	798
	1997	62	109	215	283	61	730
	1998	32	66	110	200	249	657
	1999	1	9	14	20	56	100
BCCOL Total		**533**	**843**	**776**	**587**	**370**	**3,109**
Grand Total		**1,742**	**2,171**	**2,350**	**2,148**	**2,033**	**10,444**

For the purposes of this analysis, the cohort does not include all students who graduated from a B.C. secondary school and entered SFU from a B.C. college or directly from high school. The cohort excludes students who:

a) did not have a B.C. Provincial Education Number (BCPEN), or
b) did not match to the provincial exam files, or
c) did not have a provincial exam grade in English 12, or

d) did not have a provincial exam grade in at least one other examinable course[10].

Relational Database:
A relational database at the student level was set up for the study and includes all information on members of the cohort from the time of their admission to SFU, up to and including semester 2002-3. The database includes high school course grades, SFU course grades, transfer course grades, student demographics, performance at SFU in each semester of registration, and credential and program information.

Analysis Files:
For simplicity of analysis, two SPSS data files were created by means of extracting and summarizing relevant information from the relational database. One file provided the student characteristics and their academic performance measures, while the other file provided the courses performance data for each student. Detailed descriptions of these analysis files are included in ***Appendix C***.

Student Profile

In this section of the report, a profile of the students in each admission group is provided. This profile provides a comparison of the volume of students admitted, their average high school grades, age and gender distributions, faculty, credential and program distributions, distribution of credits transferred and degree completion information (see ***Appendix D***). Differences between the B.C. direct entry students and the B.C. college transfer students are highlighted, but any differences in academic performance between the two groups will be discussed later in the report.

The Path from Secondary School Graduation to SFU Admission: The total cohort of 10,444 students includes 7,335 students admitted from B.C. secondary schools and 3,109 admitted from a B.C. college. In each year from 1992 to 1996, approximately 2,100 graduates from a B.C. secondary school entered SFU, either directly from high school (1,500 per year) or via transfer from a B.C. College or Institute (600 per year). The 7,335 students who came to SFU directly from high school were admitted from 1992-2 to 1997-2; the 3,109 students who went to college first, were admitted to SFU approximately two years later, from 1994-2 to 1999-1 (see ***Table D1 in Appendix D***).

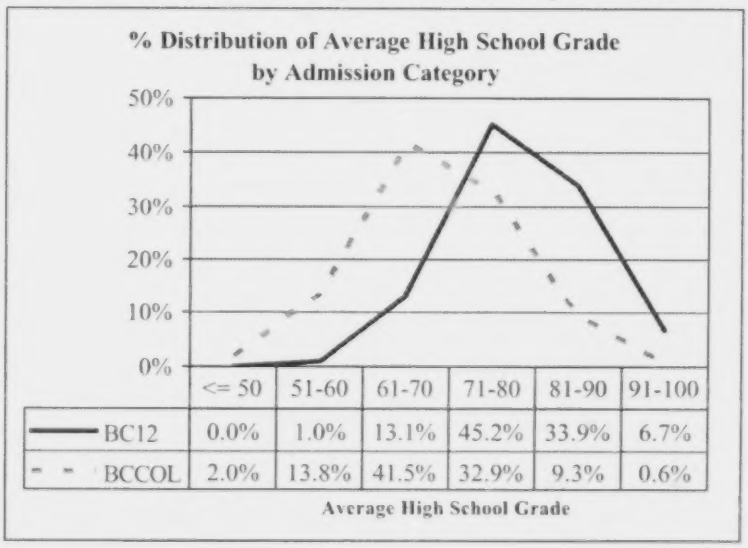
Average High School Grades: The measure of average high school grade in this study is the average of the provincial exam grades in English 12 and three other examinable

[10] The high school average is based on the "gold standard" – the average of the provincial exam grades in English 12 plus the best three other examinable courses. In cases where a student had fewer than three other examinable courses, the average was calculated on the grades in English 12 plus the best two other courses ("silver standard") or one other course ("bronze standard"). Throughout the analyses involving high school average in this study, only those students who meet the "gold" standard are included. Note that the high school average grade used in the preliminary analysis was calculated using a different algorithm (see preliminary report in Appendix A).

courses with the highest grades. Using this measure, we find that college transfer students are weaker academic students than B.C. direct entry students and in many cases their high school grades were insufficient for admission to SFU directly from high school. The average calculated for B.C. direct entry students is 78.3%, nearly 10 percentage points higher than the average for B.C. college transfer students at 68.6%. The high school grade distributions for each of the two groups are quite different (see ***Figure 2*** below): 86% of students from secondary school entered SFU with a high school average above 70%, whereas half as many (43%) of college transfer students entered SFU above 70% (see ***Table D2***).

Table B1 in Appendix B provides the high school average grade by secondary school for the top 27 feeder schools to SFU. For both groups of students who attended the same secondary school, the average high school grade achieved by direct-entry students exceeded the average high school grade of college transfer students. ***Table B2 in Appendix B*** also provides the average high school grade by secondary school and by college of transfer.

Figure 2: % Distribution of Average High School Grade by Admission Category



	<= 50	51-60	61-70	71-80	81-90	91-100
BC12	0.0%	1.0%	13.1%	45.2%	33.9%	6.7%
BCCOL	2.0%	13.8%	41.5%	32.9%	9.3%	0.6%

Age Upon SFU Admission: Students who transferred to SFU directly from a B.C. secondary school were younger, on average, than students who attended a B.C. College prior to entering SFU (average age 18 versus 21). The difference in average age between the two groups reflects the time lag for college transfer students who enter SFU approximately two years after high school graduation (see ***Table D3***).

Gender Distribution: Similar to the undergraduate student population at SFU, females dominated the cohort in this study at 54%. From 1992 to 1999, 58% of the students from all admission categories admitted to SFU were female. The proportion of females from B.C. Colleges at 58% exceeded the proportion admitted directly from

high school (53%). This difference is likely due to differences in program mix (see ***Table D4***).

Faculty and Credential Upon Admission to SFU: Upon admission to SFU, 41% of the total cohort was admitted to Arts, 21% to Science, 20% to Business, 14% to Applied Sciences and 4% to Education. Compared to college transfer students, the Faculty destinations of B.C. direct entry students showed a higher proportion entering Applied Sciences (17% versus 9%) and Science (26% versus 10%). Direct entry students were less likely to enter Arts (36% versus 53%) and Business (18% versus 23%). The top three credentials sought by students in this study were Bachelor of Arts (40%), Bachelor of Science (28%) and Bachelor of Business Administration (20%) (see ***Tables D5 and D6***).

Program Upon Admission to SFU: Direct entry students and college transfer students have different program preferences, although the most popular program sought by both groups was Business Administration. The top three programs sought by direct entry students were Business Administration (17%), Biological Sciences (6%) and Computing Science (6%). The top three programs sought by college transfer students were Business (22%), Criminology (9%) and Psychology (8%). In addition, direct entry students were more inclined to be without a declared program (34%) than college transfer students (21%) (see ***Table D7***).

Transfer Credits Upon Admission to SFU: By definition, B.C. college transfer students are normally admitted to SFU with a minimum of one full year of transferable work (30 transfer credits), and as such, the majority (90%) of college transfer students enter SFU with 30 credits or more. Approximately 11% entered with fewer than 30 credits and 41% entered with 51 to 60 credits. B.C. direct entry students do not normally enter SFU with transfer credits: 75% entered without transfer credits (see ***Table D8***)[11].

Baccalaureate Graduates: The proportion of students who graduated from high school in 1995 or 1996 and subsequently graduated from SFU with a Bachelor's degree by the Fall of 2002 is 62% of B.C. secondary school entrants and 75% of B.C. college transfer students (see ***Table D9***). It is important to note that direct entry students show lower graduation rates because those college students who would not persist to SFU graduation were filtered out in college and did not transfer to SFU. We can filter out the non-persisters from each group by selecting only those students who completed at least 30 credits in total. The results in ***Table D10*** show that the seven-year graduation rates of the two groups are approximately equal at 72% to 73%.

Faculty Transitions of Baccalaureate Graduates: One measure of the stability of a cohort is the degree or extent to which students complete a degree in the faculty where they began their program. Among the group of baccalaureate graduates, 62% of those who entered SFU directly from high school completed a credential in the same

[11] Direct entry students with transfer credits primarily include students who entered SFU with Advanced Placement or International Baccalaureate credits.

faculty to which they were initially admitted; by comparison, the proportion was 77% among the group of students who entered SFU from a B.C. college. The greater stability exemplified by the B.C. college transfer students is likely attributed to the fact that these students had an opportunity while attending college to decide what they would ultimately pursue once admitted to SFU.

The distribution of bachelor's degree completers by faculty at graduation shows a greater preference for Arts (63%) among B.C. college transfer students than students who entered directly from high school (41% Arts and 22% Applied Sciences). (See ***Table D11***).

Differences in Academic Performance

A comparative summary of academic performance indicators is provided in ***Appendix E***, including the average high school grade, admission GPA, credits transferred and completed, cumulative grade point average, degree completion rate, early leaver rate and university failure rate. ***Appendix F and H*** provide additional detail in support of the summary in Appendix E. In this comparison of performance indicators, the mean and standard deviation for each indicator for the BC12 group versus the B.C. college transfer group (BCCOL) is provided, along with the difference between each indicator (BC12 minus BCCOL). Each of these differences was tested for statistical significance using independent sample t-tests. Significant differences ($p < .05$) are highlighted in the table.

This section of the report identifies significant differences (or similarities) in academic performance between the two groups. With the use of statistical procedures and other background information, an interpretation of the comparative scores on each academic performance indicator is provided. In some cases, regression analysis or analysis of covariance was used to calculate adjusted differences in the means between the two groups, by controlling for the high school average. In other cases, where an obvious or informed explanation can be provided, statistical methods are not used[12].

Throughout this section of the report it is frequently noted that: (a) students with high school grades below 75% (the "low achievers") perform better at SFU if they transferred from college as opposed to entering directly from high school; and (b) college transfer students and direct entry students often performed equally if their high school grades were 75% or higher (the "high achievers"). This may seem counter-intuitive because in aggregate the SFU performance scores are generally higher for direct entry students than college transfers students. However this can be explained by the fact that the overall performance scores for BC12's and BCCOL's are essentially weighted average scores. The weighted average performance scores for BC12's are strongly influenced by the presence of proportionately more students from the "high achievers" group while the overall performance of BCCOL's is strongly influenced by the presence of proportionately more "low achievers".

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[12] All statistical tests were carried out at a 5% significance level. The conclusions are unchanged even after subjecting all comparisons to a stricter significance testing criterion using the Bonferroni correction.

High School Average Grade: This is the mean grade calculated on each student's English 12 provincial exam grade plus three other grade 12 academic courses with the highest provincial exam grades. This indicator was derived solely as an unbiased measure of high school performance in this study and it is used as the control variable when testing for differences in mean academic performance between the direct entry students and the college transfer students. The average high school grade of 78.33% for BC12's is nearly ten percentage points higher than the average high school grade achieved by B.C. college transfer students (68.49%).

In the time period of this study, the minimum qualification for admission to SFU was approximately 75%[13]. ***If the high school average grade calculated for this study had been used for determining SFU admission eligibility, then 77% of the B.C. college transfer cohort would not have qualified for SFU admission upon secondary school graduation, compared to 34% of the B.C. direct entry cohort. These differences show that many B.C. college transfer students completed high school with insufficient grades to enter SFU.***

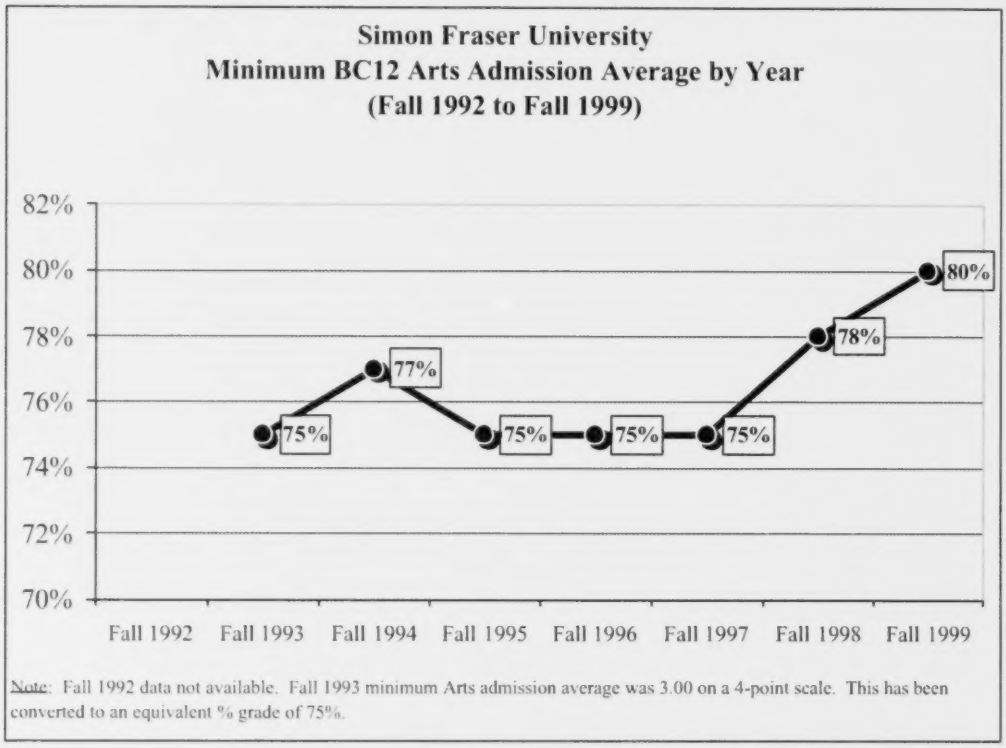
It should be noted that, although the average high school grade is the best measure available for controlling for high school performance in this study, it is not a "real" measure, in the sense that it is not used in determining admission eligibility at SFU. For students entering SFU directly from high school, the admission GPA is based on a 40%-60% blend of the provincial exam scores and school-assigned grades in grade 12 courses and is referred to as the secondary school percentage grade. For this reason, most of the BC12 students in this study whose average high school grades fell below 75% were in fact successfully admitted to SFU with blended secondary school grades above 75% (or they satisfied other special admission requirements). For B.C. direct entry students who sought admission to SFU during the time period of this study, the minimum Arts admission average by year is provided in ***Figure 3*** on the following page.

Throughout this section of the study we will compare the various academic performance measures for the two groups, including total credits completed, cumulative grade point average, degree completion rate, etc. using the high school average grade as a control variable. A series of charts is provided in ***Appendix H*** showing the comparative academic performance of direct entry students and college transfer students at each level of high school average grade. In some of the analyses in this study, the high school average grade is used as a covariate in an Analysis of Covariance (ANCOVA) or regression analysis. In other cases (for simplicity of interpretation or in situations where non-parallel regression lines would lead to unreliable ANCOVA results), the students above and below the 75% cut-off point are segregated into two groups, the "upper high school achievers" group and the "lower high school achievers" group. Once separated into these two groups, the upper high

[13] Meeting the minimum admission qualifications does not guarantee university admission. Higher entrance requirements, or quota minimums, are usually implemented each year to limit the number of students admitted when the demand for available SFU spaces exceeds supply.

school achievers and lower high school achievers were used as categorical variables in an analysis of variance (ANOVA).

Figure 3: SFU Minimum BC12 Arts Admission Average by Year



SFU Admission GPA: This is the admission grade point average calculated for all students on their previous academic work and is used to determine admission eligibility to SFU. For BC12 students, the admission GPA is calculated on their high school performance. For B.C. college transfer students, the admission GPA is calculated on their transferable college work. (Grades in college for which the college course(s) do not transfer to SFU are excluded from the admission GPA).

B.C. college transfer students are admitted with a B-average (3.02) on their *college* work, while BC12's are admitted with a B+ average (3.36) on their *grade 12* work. The difference between the admission GPA's is not meaningful since they are not measuring the same sets of academic work.

Total Transfer Credits: These are credits completed at another post-secondary institution (primarily B.C. college) prior to SFU admission. College transfer students completed an average of 47 credits before admission to SFU, while B.C. direct entry students completed approximately one college course (or an average of 3.66 credits) prior to their admission to SFU.

The difference in the number of credits transferred is not unexpected, given that a college transfer student, by definition, normally enters SFU with at least one year (30-credits) of transferable college work, while a student admitted directly from secondary school does not normally earn transfer credit prior to admission (although 25% of the direct entry cohort did earn some transfer credit – primarily Advanced Placement and International Baccalaureate credits).

Total LOP Credits: These are credits completed at another post-secondary institution *after* admission to SFU. Students require a "Letter of Permission" (LOP) from SFU in order to take courses from other institutions for transfer credit towards their SFU degree. B.C. direct entry students completed approximately one more LOP credit than B.C. college students (2.91 versus 2.00). Although statistically significant, this difference is of little interest to this study and it is not sufficiently large to pursue further.

Total SFU Credits Completed: These are the total credits completed at SFU by all students in each of the BCCOL and BC12 cohorts, including both degree-completers and non-completers. Since BC12 students completed fewer transfer credits, it is expected that they would complete more SFU credits than college transfer students. B.C. direct entry students completed a total of 100 SFU credits on average versus 70 SFU credits for college transfer students.

Total Credits Completed: This is the combined total of transfer credits completed and SFU credits completed, and as such, it is a more meaningful indicator for comparison than SFU credits completed.

In total, B.C. college transfer students completed 14 more credits than B.C. direct entry students (117 versus 103 credits). This is primarily because there are proportionately more non-completers in the B.C. secondary school admission group than the college transfer group. For both cohorts, students in the lower achievers group (those with a high school average below 75%) completed fewer credits in total than students who were academically more qualified for university (the upper achievers group).

Since this statistic includes both degree-completers and non-degree completers, it must be interpreted with caution – a proportion of students in each cohort will continue to complete additional credits beyond the end of the time range for this study. A more meaningful comparison follows below where we look at the total credits completed by bachelor's degree completers only.

Total Credits Completed Upon Bachelor's Degree Completion: This is the combined total of transfer credits completed and SFU credits completed, but only for those students who completed an SFU Bachelor's Degree at SFU. This is a useful comparative indicator for two reasons: (1) all credits completed since high school graduation are included, and (2) the students within each cohort have completed an SFU degree, although each group took a different route to its degree. The total

number of credits completed is identical for each group at 129 credits[14]. This indicates that ***the choice B.C. high school graduates make in choosing their route to an SFU bachelor's degree, either directly from high school or through a B.C. college, has no effect on the total number of credits they will complete to obtain their degree.***

CGPA on First 30 SFU Credits: This is the cumulative grade point average calculated on the first 30 credits completed at SFU. This performance measure has been adjusted such that the CGPA on the first 30 SFU credits for college transfer students is compared to the CGPA of an equivalent year-level block of 30 credits for direct entry students. A weighted average over all student year levels is calculated to provide a single indicator of CGPA on the "first 30" SFU credits for each admission group.

The mean CGPA on the "first 30" SFU credits is 2.72 for B.C. direct entry students, and 2.64 for B.C. college transfer students, representing a difference of 0.08. Among the upper achievers in secondary school, there was no statistically significant difference between BC12's and college transfer students in their CGPA on the first 30 SFU credits. However, the difference in mean CGPA's reverses for those students in the lower high school achievers group, where B.C. college transfer students achieved higher CGPA's (2.56) on their first 30 SFU credits than direct entry students (2.40). ***From these observations of the CGPA on the "first 30" SFU credits, we can conclude that: (1) students who perform well in secondary school perform equally well in their first 30 credits at SFU, regardless of the route they choose to get to SFU (via B.C. college or directly from high school); (2) students who do not perform well in secondary school perform better in their first 30 credits at SFU if they attend a B.C. college first, rather than entering SFU directly from high school.***

CGPA Achieved by Baccalaureate Graduates on their Last 60 SFU Credits: This is the cumulative grade point average calculated on the final two years or last 60 credits at SFU ($CGPA_{L60}$), but only among those who have graduated with a bachelor's degree from SFU. Overall, B.C. direct entry students achieved a $CGPA_{L60}$ of 3.12, whereas B.C. college transfer students attained only 2.93. However, among the academically stronger high school graduates or the upper achievers, there is no statistically significant difference in the CGPA of SFU baccalaureate graduates on their final 60 SFU credits, whether they entered directly from secondary school or transferred from a B.C. college; among the weaker academic high school students or the lower achievers, the difference between $CGPA_{L60}$ of 2.88 for BC12's and 2.86 for B.C. college transfer students is only 0.02. Thus we can conclude that ***students with the same high school achievement level (upper or lower) can expect to perform approximately equally in their final 60 credits upon SFU degree completion, whether they were admitted directly from high school or transferred from college.***

[14] Most bachelor's degree programs at SFU require successful completion of 120 credits for graduation, however honors programs require 130 credits; Engineering Science graduates require 140 credits for the general degree and 152 for an honors degree.

So far, we have simply compared the means of two groups, the upper and lower high school achievers, for students admitted to SFU from secondary school versus students admitted from a B.C. college. We will now conduct a more refined analysis, using regression and individual high school grades, to compare the mean $CGPA_{L60}$ between B.C. direct entry students and college transfer students.

The regression plots for the B.C. college transfer group and the B.C. direct entry group are shown in ***Appendix F***. The regression lines cross at a high school average grade of 81%. Using a 95% confidence interval, the regression results indicate that students from both admission groups with average high school grades ranging from 73% to 92% will perform equally as well in their final 60 credits upon SFU graduation. Above the 92% high school average grade level, direct-entry students will out-perform college transfer students; below the 73% high school grade level, college transfer students will out-perform secondary school entrants in their final two years at SFU. Given that virtually all college transfer students in this study had high school average grades of 92% or less, ***college transfer students can expect to perform just as well or better than direct entry students on the final sixty credits upon SFU degree completion.***

A chart of the bachelor's degree completion CGPA on the final 60 SFU credits by high school average grade is provided in ***Appendix H (page H1)***. A visual inspection of this chart confirms the above regression findings.

CGPA on Last 60 Credits by Bachelor's Degree Completed: One final method of examining the CGPA on the final 60 hours at SFU is to compare the difference in cumulative performance between direct entry students and college transfer students for each bachelor's degree completed. Overall, there is a significant difference in $CGPA_{L60}$ between the two groups for baccalaureate graduates with a degree in Arts, Business or Science, but when we control for high school achievement level (upper versus lower), the difference for Arts and Science graduates becomes insignificant. ***By bachelor's degree completed, the only significant difference in CGPA on the final 60 hours is found for Bachelor of Business Administration graduates where both the upper and lower achievers from BC12 outperform the college transfer students (3.18 versus 3.03 and 2.99 versus 2.88 respectively).***

Appendix H (pages H2 to H5) provides charts of the $CGPA_{L60}$ for each of the following bachelor's degrees completed: Bachelor of Arts (BA), Bachelor of Business Administration (BBA), Bachelor of General Studies (BGS), Bachelor of Science (BSc) and Bachelor of Science in Kinesiology - BSc (Kin). A visual inspection of these charts confirms that there is no apparent difference in the $CGPA_{L60}$ for baccalaureate graduates by degree program completed and average high school grade, with the exception of Business Administration graduates. It should also be noted for BGS graduates that the apparent difference in performance between BC12's and college transfer students is *not* significant due to the small number of students represented.

Degree Completion Rate: This is the proportion of students in each cohort that completed a Bachelor's degree at SFU. Since the direct entry students and college transfer students each entered SFU at different times, it is important to measure the degree completion rates from the same starting point. One way to do so is to look at the proportion of each high school graduating class that completed an SFU bachelor's degree within five and six years of high school graduation. Among the students who entered SFU directly after graduating from high school in 1995 or 1996[15], 30% graduated with a bachelor's degree from SFU within five-years and 52% graduated within six years; by comparison the rates for college transfer students were 32% after five years and 61% after six years (see ***Table D9***). The difference in graduation rates must be interpreted carefully, since the college transfer students who entered SFU are the "survivors" from high school who completed 30 or more post-secondary credits in college before entering SFU, whereas the direct entry students include a mix of survivors and non-survivors, many of whom will not complete 30 credits, let alone 120 credits to graduate.

A better comparison between direct entry students and college transfer students is to compare the graduation rates by high school graduating class, but only for the "survivors", or those students in each group who completed at least 30 credits in total. Results of such a comparison show insignificant differences in the five- and six-year graduation rates: 41% and 50% for direct entry students versus 42% and 51% for college transfer students (see ***Table D10***). ***After seven years the graduation rates for direct entry students and college transfer students are approximately equal at 72% or 73%.***

Appendix H (pages H6 and H7) provides a visual display of the seven-year degree completion rates by high school average grade for college transfer students and direct entry students.

Early Leavers: In this study, an early leaver is defined as a student who was admitted to SFU and subsequently completed 15 or fewer SFU credits without completing an SFU degree. The proportion of early leavers was higher among college transfer students at 7.3% of the cohort, compared to 5.7% of the direct entry cohort. The difference of 1.6% is statistically significant, but ***when we control for the high school achievement (lower versus upper), there is no significant difference between direct entrants and B.C. college transfer students in the proportion who will leave SFU before completing a half-year of SFU course work (15 credits).***

These results may seem surprising, given that college transfer students do not experience as large a transfer shock as direct entry students. However, consider the fact that proportionately more direct entry students enter the Faculty of Science, where SFU courses are typically graded lower, and proportionately more college

[15] Only high school graduating classes of 1995 and 1996 were selected for the degree completion rate calculation because college transfer students from earlier high school graduating classes did not have an equal number of semesters at SFU as the secondary school students. This was an oversight in the specification of the range of SFU admission semesters selected for college transfer students in this study.

transfer students typically enter the Faculty of Arts, where courses are typically graded higher at SFU. SFU results from the *2000 British Columbia Universities Early Leavers Survey*[16] revealed that students were more likely to become early leavers if they entered the Faculty of Science than those who entered Arts.

Appendix H (page H10) provides a visual display by high school average grade of the early leaver rates for direct entry students versus college transfer students. The chart shows that the greater the high school average, the lower the early leaver rate. The chart also shows that direct entry students admitted below the 70% mark have a higher early leaver rate than college transfer students with the same high school grade range. Note that the early leaver rates between the two admission groups are not directly comparable because many of the college transfer students admitted to college below 70% might have departed early from the college and never transferred to SFU.

University Failure Rate: This is the proportion of students in each cohort who were deemed ineligible to re-register in a subsequent semester, based on their unsatisfactory academic standing in their last registered semester at SFU.[17] A total of 11% of the BC12 cohort and 8% of the college transfer cohort were ineligible to re-register. The difference in the university failure rate is significant. However, ***upon examination of the university failure rates among the upper high school achievers, no significant difference in rates were found, but among lower high school achievers a much larger proportion of BC12's were found ineligible to re-register (19% of BC12's became ineligible to re-register compared to 8% of BCCOL's).***

A more equitable comparison of university failure rates between the two admission groups can be performed by looking only at those students who completed a total of 30 credits (SFU credits plus transfer credits). In this case, the college transfer students show a higher failure rate (8%) than the direct-entry students (5%). While this difference is significant, it is not significant when controlling for upper and lower high school achievers (see Appendix E).

Appendix H (pages H8 and H9) provides a visual display comparing the university failure rates for college transfer students and direct entry students.. The charts show for both groups that the lower the high school average grade, the greater the odds of a student becoming ineligible to re-register in a subsequent semester. In addition, when we examine the university failure rate among those who completed at least 30 credits in total, within each of the 10% bands of high school average grades, it is clear that the college transfer students have a slightly higher university failure rate at all levels of high school average grade ***(page H9)***.

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[16] Conway, Chris (2000). *2000 British Columbia Early Leavers Survey*.

[17] For the students in this study, the academic standing values that indicated registration ineligibility were: RTF=Required to Withdraw, INF=2 or more consecutive semesters of registration with only N or F grades, ING=CGPA below 1.00 for 2 consecutive semesters of registration, PW=extended withdrawal). No assessment of academic standing is made until the student has completed a minimum of nine SFU credit hours of assigned grades.

Differences in SFU Course Grade Performance

The final area of comparative performance is in the specific grades received by B.C. direct entry students compared to B.C. college transfer students. A file of SFU course grades was assembled for all students in each of the BC12 and BCCOL cohorts (see ***Appendix C***) and a comparative summary of mean course grades is provided in ***Table G1 of Appendix G***.

All Courses: Over all courses combined (approximately 169,000 SFU grades for BC12's and 47,000 SFU grades for college transfer students), the average grade achieved in SFU courses was 2.89 for direct entry students compared to 2.78 for B.C. college students. The difference of 0.11 grade points is statistically significant. By controlling for high school achievement (upper achievers with a high school average at 75% and above versus lower achievers with a high school average below 75%), ***there is no significant difference in SFU course grades earned by the upper achievers in high school. However, for the lower achievers, the college transfer students out-performed the direct entry students overall on SFU courses with an average course grade of 2.71 for college transfer students and 2.64 for direct entry students.***

Appendix I (page I1) provides a visual display of the mean course grades in all SFU courses by high school average grade. The chart confirms the above results: below the high school average range of approximately 70% to 75%, the college transfer students achieve higher SFU course grades than direct entry students.

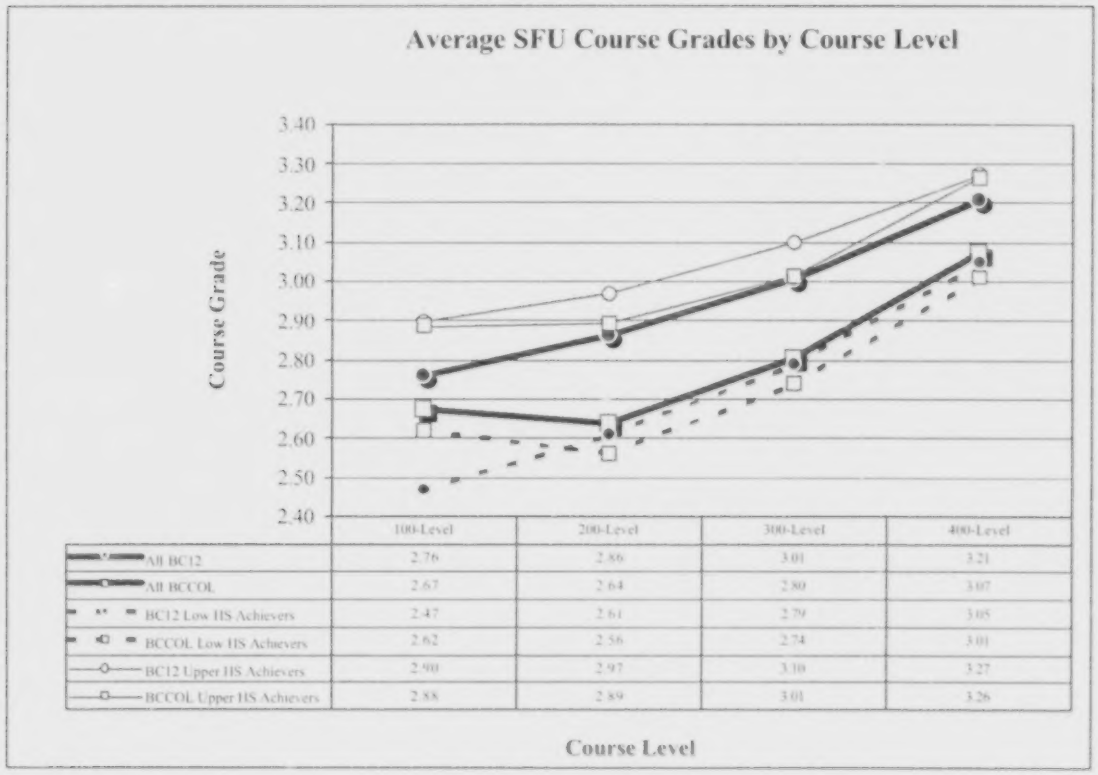
Courses by Level: Since the mix of courses completed by direct entry students includes more lower-level courses compared to college transfer students who complete more upper-level courses, a more equitable comparison of course grades is at the course level (100, 200, 300 and 400).

At all course levels, the overall average grade achieved in courses by direct-entry students was higher than it was for B.C. college transfer students. The largest difference in course grades was at the 200- and 300-levels, where BC12's achieved grades that were 0.22 and 0.20 points higher than transfer students.

By controlling for high school achievement (lower achievers versus upper achievers), it was found that direct entry students still achieve slightly higher SFU course grades at the 200- and 300-levels, but these statistically significant differences, ranging from 0.05 to 0.08, were quite small. ***In 100-level courses it was found that lower achievers who entered SFU directly did not perform as well as lower achievers who came to SFU via a B.C. college; upper achievers performed equally well in 100-level SFU courses, regardless of their admission category.***

Figure 4 shows the average SFU course grades by course level and by high school achievement group (upper versus lower) and by admission category (BC12 versus college transfer).

Figure 4: Average SFU Course Grades by Course Level



	100-Level	200-Level	300-Level	400-Level
All BC12	2.76	2.86	3.01	3.21
All BCCOL	2.67	2.64	2.80	3.07
BC12 Low HS Achievers	2.47	2.61	2.79	3.05
BCCOL Low HS Achievers	2.62	2.56	2.74	3.01
BC12 Upper HS Achievers	2.90	2.97	3.10	3.27
BCCOL Upper HS Achievers	2.88	2.89	3.01	3.26

The general trend evident in this chart is the upward movement of the SFU course GPA with each increase in the course level. These trend lines are approximately parallel for each high school achievement group and each admission category, with the upper high school achievers lying above the lower high school achievers and the direct entry students lying above the college transfer students. The only obvious break in the parallel lines is at the 100-level, where the lower high school achievers who entered SFU via the college transfer route out-performed the lower high school achievers who entered SFU directly from secondary school.

Appendix I (pages I2 to I6) provides charts comparing the mean SFU course grades achieved by direct entry students and college transfer students by course level. These charts confirm the findings by course level: ***the college transfer students perform better in 100-level courses than direct entry students, but only for lower level achievers. In 200-, 300- and 400-level courses, the differences between the two admission groups are very small or insignificant.***

100-Level Courses by Discipline: Further to the findings above, a closer look at the differences in 100-level SFU course grades was conducted to determine if the differences in course grades were concentrated in any particular disciplines. Forty different course disciplines were represented in the 100-level course data. ***Any significant differences in grades by discipline showed that college transfer students performed better than direct entry students if they came from the group of lower achievers in high school; direct entry students performed better than college transfer students if they were from the group of upper achievers in high school.***

Significant differences in 100-level course grades were found among the *lower achievers* in fifteen of the course disciplines. The course grade achieved by college transfer students exceeded that of the direct entry students in the following fourteen course disciplines: Biological Sciences, Communications, Computing Science, Criminology, English, Environmental Planning, Fine and Performing Arts, History, Latin American Studies, Linguistics, Mathematical Computing, Philosophy, Resource and Environmental Management and Sociology/Anthropology. Only in Chinese courses did direct entry students achieve higher course grades than college transfer students (among the lower high school achievers).

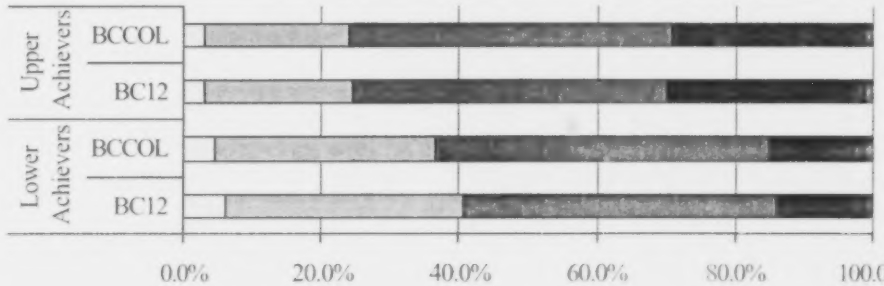
Significant differences in mean 100-level course grades were also found among the *upper high school achievers*, but only in six course disciplines (Chemistry, Economics, Environmental Planning, Mathematics, Physics and Psychology). In each of these disciplines, the direct entry students achieved higher grades than college transfer students, except in the case of Environmental Planning where college transfer students achieved higher 100-level course grades.

Distribution of Grades: The difference in average course grades between the two admission groups can be more clearly understood when we examine the distribution of grades received, that is the proportion of A's, B's and C's (see ***Figure 5*** on the following page).

When we control for high school achievement level, the distribution of grades between the two admission groups is very similar, although the lower achiever direct entry students receive more C's and failing grades than the lower achiever college transfer students; the upper achiever students receive roughly the same distribution of grades, regardless of the admission cohort (BC12 versus BCCOL).

Distribution charts by letter grade are provided in ***Appendix I (pages I7 to I10)***. In general, these charts show that regardless of the admission category, the higher the secondary school average grade, the greater the proportion of A grades received and the smaller the proportion of C grades and failing grades received.

Figure 5: Grade Distributions by High School Achievement Level



	Lower Achievers		Upper Achievers	
	BC12	BCCOL	BC12	BCCOL
% A's (A+, A, A-)	13.8%	15.0%	29.6%	29.0%
% B's (B+, B, B-)	45.3%	48.3%	45.6%	46.9%
% C's (C+, C, C-)	34.8%	31.9%	21.6%	20.8%
% D, F, N	6.0%	4.7%	3.1%	3.2%

Failed Courses: Another measure of academic performance in SFU courses is the proportion of students who failed an SFU course. Out of approximately 169,000 course grades from direct entrants and 47,000 SFU course grades from college transfer students, each group showed a 2.0% course failure rate. A course failure in this study is indicated by courses for which a grade of N or F was awarded. (N indicates the student did not write final exam or otherwise complete the course and F indicates unsatisfactory performance or failure).

When controlling for high school achievement level, ***no significant differences between direct entrants and college transfer students were found in the proportion of upper high school achievers who failed courses, but lower high school achievers were roughly 1% more likely to fail an SFU course if they entered SFU directly from high school (3.0% course failure rate versus 2.1% for college transfer students).***

The difference in the overall course failure rate (2.7% for BC12's versus 2.9% for BCCOL's) is largely influenced by the course failure rate in 100-level courses. Among lower achievers, the course failure rate on 100-level courses is 4.3% for BC12's versus 3.0% for college transfer students. Among upper achievers, the 100-level course failure rate is roughly equal between college transfer students and direct entry students at 2%. ***Appendix I (pages I11 to I13)*** provides visual displays of the course failure rates in all courses, 100-level courses and courses above the 100-level combined.

Unsatisfactory Course Performance: Another measure of academic performance in SFU courses is the proportion of students who achieved grades below C. The proportion of unsatisfactory grades (or grades of C-, D, F or N) awarded to direct entry students was 8.5%, compared to 9.9% for college transfer students. ***Among upper high school achievers there is no significant difference in the proportion of unsatisfactory grades received, but for lower high school achievers, the proportion was significantly different at 12.7% for direct entry students and 10.8% for college transfer students.***

Similar to the course failure rates, the difference in the proportion of unsatisfactory grades for both admission groups is largely influenced by the unsatisfactory grade rate in 100-level courses (11.0% at the 100-level versus 7.6% for courses above the 100-level). For lower achievers, the proportion of unsatisfactory grades awarded in 100-level courses is significantly different at 16.5% for BC12's and 13.2% for college transfer students. For the upper achievers, the proportion of unsatisfactory grades awarded in 100-level courses is roughly equal between college transfer students and direct entry students at 8.2%. Upper achievers from high school receive fewer unsatisfactory grades in courses above the 100-level than college transfer students (5.8% versus 6.5%). ***Appendix I (pages I14 to I16)*** provides charts of the course failure rates in all courses, 100-level courses and courses above the 100-level combined. These charts provide visual confirmation of the above findings.

Individual Courses: The final analysis on course grades was conducted on individual courses where more than 20 students from each of the cohorts had completed the course. Out of 65 courses selected for this analysis, statistically significant differences in mean course grades were identified in 27 (or 42%) of the courses. In 25 of these courses, the grade for BC12's exceeded the grade for B.C. college transfer students. Only EDUC 326 and PSYC 357 showed a higher average grade for college transfer students than direct entry students.

These differences in course grades were further analysed by controlling for the high school achievement (upper achievers versus lower achievers). The results confirm that, when controlling for high school achievement, very few significant differences in SFU course grade performance were found. In the few cases where differences were found, it was primarily direct entry students who maintained the higher course grade. A summary of the differences in mean SFU course grades is provided in ***Table G2*** of ***Appendix G***.

Among the *upper achievers*, direct-entry students had significantly higher SFU course grades than college transfer students in four SFU courses (BICH 221, BUS 237, BUS 254, BUS 374) and lower grades in one SFU course (EDUC 326).

Among the *lower achievers*, direct-entry students had significantly higher SFU courses grades than college transfer students in five SFU courses (BUS 207, ECON 210, PSYC 201, PSYC 221 and PSYC 369) and lower grades in three SFU courses: ECON 301, EDUC 326 and LING 110.

The differences in course grades between the two admission groups were further tested for differences in means by controlling for the high school average grades at each percentage point on the scale by using an analysis of covariance. Due to interaction effects between the high school average grade and the basis of admission category and violations of the equality of variance assumption, the analysis of covariance results were considered invalid for approximately half of the 65 courses tested. Among the remaining courses where analysis of covariance results were valid, no statistically significant differences in SFU course grades were found when controlling for high school average grades at each percentage point. ***Therefore, by controlling for high school grades, we can conclude that direct entry students and college transfer students perform equally well on the 33 individual SFU courses tested***. For each of the 65 courses, ***Table G3*** of ***Appendix G*** compares the mean course grades between direct entry students and college transfer students in 10% ranges of high school average grade levels. ***Appendix I (pages I17 to I24)*** provides charts of the mean course grade in several randomly selected SFU courses.

Conclusion

This report has compared the academic performance of two distinct admission groups of students who graduated from a B.C. secondary school in the five-year period from 1992 to 1996 and were admitted to SFU from 1992 to 1999. Each of these groups chose an alternate path to SFU: 7,335 direct-entry secondary school students entered SFU from a B.C. high school within one year of high school graduation, while 3,109 college transfer students entered SFU after completing approximately thirty or more college transfer credits in a B.C. college.

Regardless of the path chosen to enter SFU, either through college or directly from high school, ***students admitted with the same high school achievement level perform <u>equally</u> well at SFU in terms of the following performance indicators:***

- bachelor's degree completion rates,
- early departure rates,
- university failure rates,
- course grade performance in 400-level courses, and
- course grade performance in other selected courses.

This study has also shown on many performance indicators that there is no difference in the academic performance between direct entry students and college transfer students if they each achieved an average high school grade of at least 75% (these are the *upper high school achievers*). If the average high school grade, based purely on provincial exam scores, had been used as the sole determining factor for SFU admission eligibility, then 66% of direct entry students and 23% of college transfer students in this study would have been eligible for admission to SFU directly from high school. In addition to the findings above for all students, the ***college transfer students and direct entry students***

from this upper achievers group performed <u>equally</u> as well at SFU in terms of the following performance measures:

- CGPA on the first 30 SFU credits (2.88),
- CGPA on the last 60 credits upon SFU graduation (3.20),
- university failure rate after completing at total of 30 credits (3.9%)
- average grade in SFU courses (3.01),
- average grade in 100-level courses (2.90),
- proportion of A and C grades received in SFU courses (30% A's, 22% C's),
- course failure rates (1.6%), and
- the proportion of unsatisfactory grades received (7%).

This study did find differences in the academic performance between direct entry students and college transfer students, but this was primarily if they each achieved an average high school grade below 75% (these are the *lower high school achievers*). These students (34% of the direct entry cohort and 77% of the college transfer cohort) would not have been admitted to SFU directly from high school if the average grade in selected provincial exams had been used to determine SFU admission eligibility. ***The college transfer students among these lower high school achievers <u>out-performed</u> the direct entry students on the following performance measures:***

- CGPA on the first 30 SFU credits (2.56 versus 2.40),
- overall average grade in SFU courses (2.71 versus 2.64),
- 100-level course grades (2.62 versus 2.47),
- proportionately more A and B grades received (63% versus 59%),
- lower course failure rate (2.1% versus 3.0%), and
- fewer unsatisfactory grades received (11% versus 13%).

The results of this study support the notion that the transfer system between the colleges and Simon Fraser University is working effectively. The college system provides access to students who would not normally be admitted to SFU directly from high school and to university-qualified students who chose to attend a local college before transferring to SFU. The college transfer students have shown that their SFU academic performance is equal to, and sometimes better than, the performance of their academic peers from high school who entered SFU directly. The B.C. college experience is especially beneficial to those students who struggled in high school and ultimately wanted to enter SFU. The college experience can help these lower high school achievers attain higher academic success at SFU than those lower achievers who otherwise gained access to SFU directly from high school.

APPENDIX

A. Preliminary Study

B. Distribution of Students by Cohort and Secondary School Attended
Distribution of B.C. College Transfer Students by College

C. File Layouts

D. Tables. Profile of Students

E. Comparative Summary of Indicators

F. Regression Results

G. Comparative Summary of Course Grade Means

Comparative Summary of Selected Course Grades
by High School Achievement Level

Comparative Summary of Selected Course Grades
by 10% High School Average Grade Ranges

H. Academic Performance Charts by High School Average

I. Course Grade Charts by High School Average

Appendix A

Introduction:

Studies at BC universities show that transfer students achieve lower grades in university courses than direct entry students. The Office of Analytical Studies at Simon Fraser University has agreed to provide the BC Council on Admissions and Transfer (BCCAT), a comparative performance study of direct entry secondary school students and college transfer students admitted to SFU, while controlling for secondary school performance. The purpose of the study is to determine why this difference between transfer students and direct entry students exists.

The popular hypothesis is that college transfer students are weaker academic students because they did not complete grade 12; or their grade 12 grades were insufficient for university entrance; or their grades were sufficient for university entrance, but they chose to attend college where the grade distribution among college students is lower than direct entry students.

The alternate hypothesis is that transfer students are not weaker academic students. They are simply not prepared in colleges for the style of university instruction, the culture of the university environment and the rigorous requirement of university courses.

If the study finds evidence to support the popular hypothesis that lower academic performance of college transfer students at university is attributed to their lower performance in high school, then BCCAT and the colleges can maintain and promote their confidence in the BC college transfer system. The college system provides access to students who would not normally be admitted to university directly from high school.

Alternatively, if the study finds evidence that lower academic performance by college transfer students in university courses is *not* attributed to lower high school performance, thus rejecting the popular hypothesis, then it may be that college transfer students do not receive sufficient preparation in college for the university environment or there may be other underlying reasons requiring further research. The research findings and recommendations from this study will be communicated to the post-secondary education system so appropriate changes can be implemented, if necessary.

The Office of Analytical Studies at SFU conducted the following preliminary assessment of the problem to determine if further in-depth analysis would be worthwhile. This preliminary analysis involved establishing a cohort, setting up a relational database, obtaining high school grades in examinable grade 12 courses from the B.C. Ministry of Education, and making some preliminary academic performance comparisons between college transfer students and direct entry secondary school students. This paper summarizes the results of the preliminary analysis.

Appendix A

The Cohort:

The cohort for this study consists of 10,684 students admitted to SFU who graduated from a B.C. secondary school in the five-year period from 1992 to 1996. Students without a BC Provincial Education Number (BCPEN) and those who did not match to the provincial exam files are excluded from the cohort. The final cohort includes:

- 7,373 **secondary school students** admitted directly from a B.C. secondary school between the summers of 1992 and 1997 (1992-2 to 1997-2). These secondary school students represent 69% of the cohort.

- The remaining 31% of the cohort is comprised of 3,311 **B.C. college transfer students** admitted to SFU between the summer of 1994-2 and the spring of 1991 (1994-2 to 1999-1). All of these students were included in the *Profile of College Transfer Students Admitted to SFU: 1994/95 to 1998/99*, with the exception of 89 students who graduated from secondary school in 1997, 1998 or 1999.

The Relational Database:

A relational database was set up for this study and includes the following information for each member of the cohort: high school course performance, SFU course performance, transfer course performance, cohort demographics, SFU performance in each semester of registration, and credential and program information.

The Control - High School Average:

The high school grades in examinable grade 12 courses were obtained from the B.C. Ministry of Education for 10,684 members of the cohort. In cases where more than one set of grades was obtained for an individual, the highest grades were used.

An overall average high school percent grade was calculated for each student by taking the average of the best three final blended course grades[1] for each student. These best three blended course grades were selected from each of three different groups of courses:

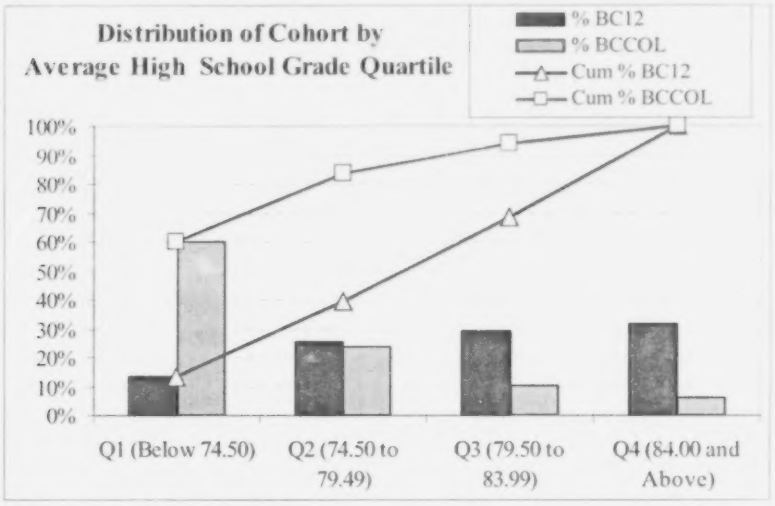
- *Group 1 - English:* English, Francais Langue Seconde-Immersion or Communications.
- *Group 2 - Sciences:* Applications of Math, Biology, Chemistry, Geography, Geology, History, Histoire, Literature, Mathematics, Principes de Mathematicques or Physics.
- *Group 3 - Languages:* French, German, Japanese, Latin, Mandarin Chinese, Punjabi or Spanish.

[1] Final Blended Course Grade = (School % Grade + Provincial Exam % Grade) / 2.

For example, the average high school percent grade for a student with final blended grades in English (90%), Biology (85%), Chemistry (60%), Mandarin (95%) and French (80%), would be derived from the grades in English, Biology and Mandarin for a score of (90 + 85 + 95) / 3 = 90. If a student only completed courses from two groups, then the average is based on two courses.

To establish four control groups for this preliminary study, each student was placed into one of four high school grade quartiles, based on their average high school percent grade. As shown in Figure 1, 90% of secondary school students had a high school average grade above 74.50 while only 40% of college transfer students had a high school average grade above 74.50. In other words, the majority of college transfer students fall in the first quartile, whereas the majority of secondary school students fall in the 3rd and 4th quartiles.

Figure 1



These two different distributions of high school grades provide preliminary support for the popular hypothesis that college transfer students are weaker academic students. However, if we take a closer look at the academic performance of students in each quartile and we find that college transfer students often perform better at university than secondary school students with similar high school grades.

Academic Performance Comparison:

GPA Trends:

One way of comparing the academic performance of college transfer students to secondary school students is to compare their cumulative grade point averages (only for those students in the cohort who pursued their credential through to completion at SFU).

Appendix A

Since a typical college transfer student will enter SFU with one to two years of college credit while a typical secondary school student will enter SFU in their first year, it is difficult to make equitable CGPA comparisons between the two groups at similar points in time. With this difficulty in mind, Figure 2 shows the CGPA performance trends of secondary school students and college transfer students at significant points of time in their academic career.

- *After the first semester at SFU.* For college transfer students, this could represent the beginning of their third year at a post-secondary institution, but for secondary school students this will primarily be their first semester at a post-secondary institution.

- *After 30 SFU Credits.* Again, the 30 SFU credits will likely be the first 30 credits for secondary school students, but it could represent the end of the second or third year for many college transfer students.

- *After a TOTAL of 60 Credits.* The total of transfer credits and SFU credits are combined to determine the 60-credit mark. From this point in time on the chart through to graduation, the two groups are more directly comparable than the previous two points in time.

- *After a TOTAL of 90 Credits.*

- *Upon Graduation.*

Figure 2: Comparison of Cumulative Grade Point Averages

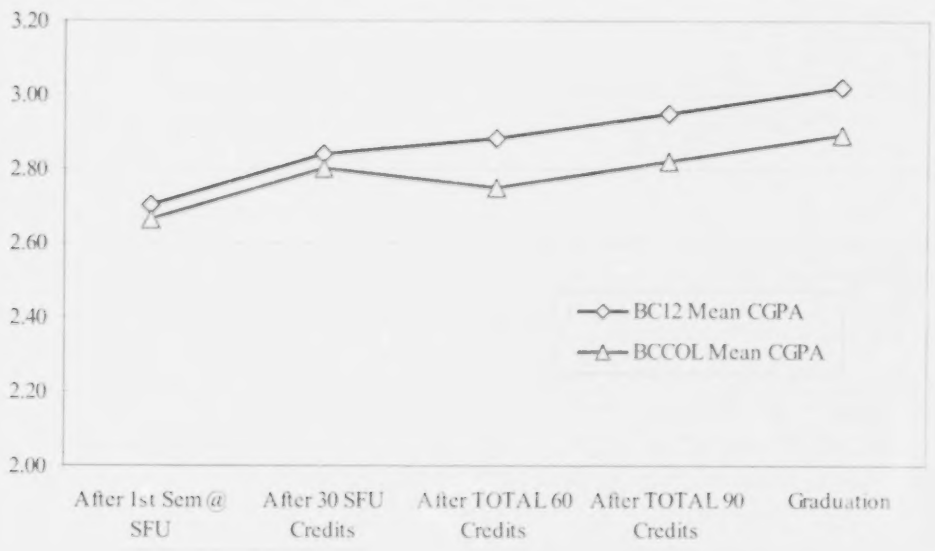
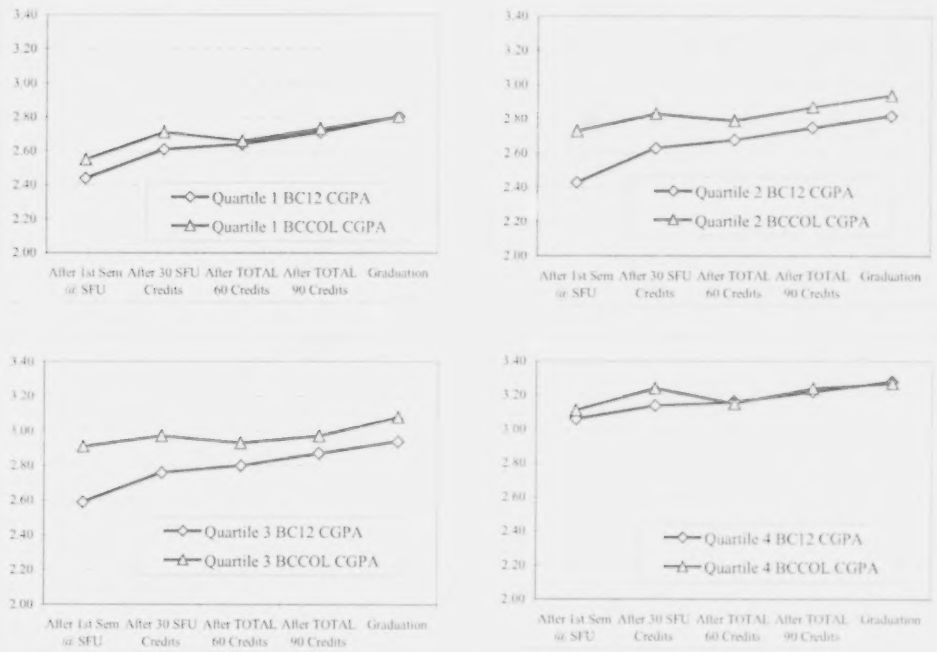


Figure 2 above shows that overall college transfer students demonstrate lower academic performance when compared to secondary school students. However, if we control for the entering high school grade, we find that college transfer students, when compared with their high school peers (in the same high school grade quartile) actually perform better than secondary school students in their first two years at university, but also perform equally as well or better than secondary school students in the final two years of their program (see Figure 3).

Figure 3.



Course Performance:

Since the above CGPA performance comparison aggregates individual course grades into cumulative grade point averages, it is not obvious if there are performance differences between college transfer students and secondary school students in specific undergraduate courses at SFU. Table 1 shows the difference in average grades achieved by the two groups of students in 38 SFU courses. These courses were chosen for analysis because at least 20 students (in each quartile and each admission category) completed these courses.

The "All BC12" and "All BCCOL" columns of the table show that, secondary school students achieve higher grades than college transfer students in the majority of the SFU courses reported. However, when we look at the difference in grades achieved by the two groups when compared to their academic peers (within each quartile Q1 to

Q4), we see that college transfer students often achieve higher grades in SFU courses than secondary school students.

Table 1

		Average Grade									
Course		All BC12	All BCCOL	Q1 BC12	Q1 BCCOL	Q2 BC12	Q2 BCCOL	Q3 BC12	Q3 BCCOL	Q4 BC12	Q4 BCCOL
PSYC	201	2.89	2.54	2.57	2.37	2.65	2.57	2.90	3.12	3.23	3.31
BUEC	333	2.89	2.59	2.58	2.49	2.71	2.65	2.90	2.84	3.16	3.05
BUS	312	2.97	2.60	2.66	2.47	2.78	2.71	2.93	2.72	3.16	3.02
BUS	343	2.96	2.70	2.71	2.61	2.79	2.70	2.90	2.88	3.13	3.13
PSYC	250	2.91	2.71	2.68	2.57	2.71	2.86	2.85	3.01	3.23	3.22
BICH	221	2.95	2.53	2.68	2.27	2.64	2.51	2.77	2.82	3.22	2.86
KIN	110	2.94	2.80	2.55	2.58	2.67	2.90	2.85	3.32	3.31	3.52
BUS	336	2.96	2.62	2.72	2.54	2.74	2.64	2.94	2.74	3.14	3.00
STAT	270	2.55	2.27	2.18	2.14	2.15	2.29	2.23	2.45	2.93	2.62
BUS	254	2.72	2.40	2.44	2.30	2.48	2.43	2.71	2.69	2.98	2.88
BUS	207	2.70	2.36	2.52	2.32	2.56	2.30	2.66	2.46	2.87	2.81
PSYC	221	2.94	2.61	2.63	2.46	2.69	2.71	2.94	2.92	3.28	3.38
BUS	478	3.06	2.90	2.95	2.91	2.92	2.84	3.00	2.89	3.21	3.17
EDUC	220	2.71	2.64	2.52	2.48	2.54	2.78	2.64	2.97	3.04	3.49
BUS	237	2.60	2.41	2.35	2.33	2.36	2.52	2.62	2.54	2.90	2.67
BUS	360	2.99	2.83	2.97	2.78	2.85	2.84	2.92	2.89	3.13	3.17
PSYC	385	3.10	2.86	2.82	2.70	2.95	2.96	3.13	3.31	3.35	3.47
PSYC	307	2.90	2.72	2.87	2.66	2.72	2.62	2.80	2.92	3.14	3.21
BUS	272	2.72	2.53	2.50	2.44	2.49	2.61	2.68	2.72	3.01	2.80
BUS	303	2.92	2.81	2.67	2.73	2.78	2.89	2.87	2.87	3.06	3.04
ENGL	312	3.00	2.84	2.88	2.70	2.84	2.91	3.01	3.03	3.12	3.22
BUS	393	3.13	2.93	3.03	2.86	2.96	2.96	3.07	2.95	3.25	3.26
CHEM	150	2.73	2.46	2.50	2.16	2.51	2.55	2.49	2.73	3.02	2.88
BUEC	232	2.78	2.52	2.54	2.43	2.61	2.60	2.79	2.79	3.04	2.80
PSYC	241	2.85	2.62	2.61	2.46	2.59	2.66	2.77	3.28	3.22	3.38
PSYC	369	2.96	2.85	2.85	2.72	2.77	2.95	2.90	3.13	3.26	3.45
KIN	143	2.85	2.56	2.42	2.26	2.53	2.70	2.83	3.20	3.23	3.18
CMNS	130	2.60	2.60	2.38	2.41	2.33	2.75	2.56	2.87	2.93	3.15
BUS	381	3.00	2.76	2.97	2.70	2.83	2.72	2.86	2.83	3.20	3.17
KIN	142	2.62	2.64	2.31	2.32	2.29	2.65	2.43	3.28	3.05	3.29
CHEM	155	2.90	2.53	2.70	2.37	2.65	2.49	2.71	2.77	3.17	2.91
BISC	202	2.72	2.20	2.62	1.91	2.38	2.18	2.46	2.45	3.03	2.68
MACM	316	2.72	2.42	2.41	2.16	2.25	2.47	2.46	2.56	2.96	3.14
BUS	251	2.65	2.40	2.34	2.32	2.39	2.50	2.63	2.56	2.99	2.57
KIN	140	2.93	2.77	2.61	2.60	2.65	2.88	2.86	3.17	3.30	3.41
CMNS	110	2.67	2.70	2.49	2.52	2.49	2.95	2.68	2.98	2.91	3.16
LING	110	2.89	2.92	2.70	2.87	2.72	2.96	2.93	3.13	3.14	3.13
BUS	319	3.00	2.63	2.67	2.44	2.72	2.62	2.94	2.81	3.24	3.48
Average		2.81	2.63	2.56	2.51	2.58	2.69	2.75	2.88	3.09	3.11

Further Analysis:

The preliminary findings presented in this paper provide a starting point for further analysis. Other areas for further analysis might include: comparisons of academic performance, retention rates, graduation rates, time to completion, continuity of enrolment and withdrawal rates while controlling for grade performance in BC secondary school examinable courses, secondary school attended, college attended and college course completed and transferred, secondary school graduation year and year of admission to SFU. Regression analysis may be an appropriate tool for this analysis.

Table B1. Distribution of Students Admitted to SFU by Cohort and Secondary School Attended

		BC12				BCCOL				TOTAL				Diff in
Secondary School Name	District	HS Avg	Freq	%	Cum %	HS Avg	Freq	%	Cum %	HS Avg	Freq	%	Cum %	HS Avg
CENTENNIAL SCHOOL	43	80.3	653	8.9%	8.9%	69.6	97	3.1%	3.1%	79.3	750	7.2%	7.2%	10.7
BURNABY NORTH SECONDARY	41	78.3	304	4.1%	13.0%	67.4	94	3.0%	6.1%	76.2	398	3.8%	11.0%	10.9
PORT MOODY SECONDARY	43	79.7	343	4.7%	17.7%	66.4	51	1.6%	7.8%	78.2	394	3.8%	14.8%	13.3
BURNABY CENTRAL SECONDARY	41	77.2	228	3.1%	20.8%	66.6	79	2.5%	10.3%	75.0	307	2.9%	17.7%	10.6
NORTH DELTA SR. SECONDARY	37	79.3	204	2.8%	23.6%	70.1	96	3.1%	13.4%	76.9	300	2.9%	20.6%	9.1
TERRY FOX SECONDARY	43	79.9	244	3.3%	26.9%	71.2	54	1.7%	15.1%	78.7	298	2.9%	23.4%	8.7
QUEEN ELIZABETH SECONDARY	36	76.0	168	2.3%	29.2%	66.9	121	3.9%	19.0%	73.4	289	2.8%	26.2%	9.1
STEVESTON SR. SECONDARY	38	79.1	121	1.6%	30.9%	69.7	108	3.5%	22.5%	75.1	229	2.2%	28.4%	9.3
MATTHEW MCNAIR SECONDARY	38	75.7	145	2.0%	32.9%	68.1	74	2.4%	24.9%	73.7	219	2.1%	30.5%	7.7
KILLARNEY SECONDARY	39	77.0	135	1.8%	34.7%	65.9	76	2.4%	27.3%	73.4	211	2.0%	32.5%	11.1
RICHMOND SECONDARY	38	76.9	81	1.1%	35.8%	67.9	110	3.5%	30.9%	72.1	191	1.8%	34.3%	9.1
NEW WESTMINSTER SECONDARY	40	80.2	151	2.1%	37.9%	71.1	31	1.0%	31.9%	78.9	182	1.7%	36.1%	9.1
BURNABY SOUTH SECONDARY	41	75.9	142	1.9%	39.8%	66.2	36	1.2%	33.0%	74.2	178	1.7%	37.8%	9.7
SIR WINSTON CHURCHIL	39	78.2	133	1.8%	41.6%	63.5	42	1.4%	34.4%	74.7	175	1.7%	39.5%	14.7
DAVID THOMPSON SECONDARY	39	79.1	105	1.4%	43.0%	69.6	61	2.0%	36.3%	76.2	166	1.6%	41.0%	9.5
ERIC HAMBER SECONDARY	39	77.3	112	1.5%	44.6%	65.9	43	1.4%	37.7%	74.5	155	1.5%	42.5%	11.5
VANCOUVER TECHNICAL	39	77.5	109	1.5%	46.1%	65.6	46	1.5%	39.2%	74.7	155	1.5%	44.0%	11.9
SEAQUAM SECONDARY SCHOOL	37	79.0	100	1.4%	47.4%	68.3	37	1.2%	40.4%	76.5	137	1.3%	45.3%	10.7
CARIBOO HILL SECONDARY	41	77.7	96	1.3%	48.7%	65.2	27	0.9%	41.3%	75.4	123	1.2%	46.5%	12.5
ALPHA SECONDARY	41	74.1	97	1.3%	50.0%	67.6	25	0.8%	42.1%	73.2	122	1.2%	47.7%	6.6
CARSON GRAHAM SECONDARY	44	81.3	79	1.1%	51.1%	69.7	39	1.3%	43.3%	78.3	118	1.1%	48.8%	11.6
GLADSTONE SECONDARY	39	77.6	81	1.1%	52.2%	62.4	37	1.2%	44.5%	73.0	118	1.1%	49.9%	15.3
ARGYLE SECONDARY	44	80.7	77	1.0%	53.3%	76.7	40	1.3%	45.8%	79.7	117	1.1%	51.1%	4.0
JOHNSTON HEIGHTS SECONDARY	36	79.8	98	1.3%	54.6%	73.3	17	0.5%	46.3%	79.4	115	1.1%	52.2%	6.5
WINDERMERE SECONDARY	39	76.7	71	1.0%	55.6%	60.7	41	1.3%	47.7%	72.0	112	1.1%	53.2%	16.0
SEMIAHMOO SECONDARY	36	77.7	74	1.0%	56.6%	72.5	33	1.1%	48.7%	76.4	107	1.0%	54.3%	5.1
MAPLE RIDGE SECONDARY	42	78.5	82	1.1%	57.7%	69.0	19	0.6%	49.3%	77.0	101	1.0%	55.2%	9.5
OTHER SECONDARY SCHOOLS (< 1% Each)	--	78.1	3,102	42.3%	100.0%	69.3	1,575	50.7%	100.0%	75.6	4,677	44.8%	100.0%	8.8
TOTAL		78.3	7,335	100.0%		68.6	3,109	100.0%		75.9	10,444	100.0%		9.7

Note: High School Average grade calculated on provincial exam scores in English 12 plus 3 other examinable courses with the highest grades.
Students with insufficient exam scores are excluded from the high school average, but included in the frequency counts.
BC12's graduated from secondary school from 1992 to 1999 and were admitted to SFU from 1992-2 to 1997-2.
College transfer students graduated from secondary school from 1992 to 1999 and were admitted to SFU from 1994-2 to 1999-1.

Table B2. Distribution of College Transfer Students Admitted to SFU by Secondary School Attended

	Lower Mainland Colleges and Institutes																		Lower Mainland Colleges		Mainland Colleges		All Colleges	
	Kwantlen		Douglas		Capilano		VCC		Fraser Valley		Columbia		Coquitlam		BCIT				Subtotal		Subtotal		TOTAL	
Secondary School Name	Freq	HS Avg	Freq	HS Avg	Freq	HS Avg	Freq	HS Avg	Freq	HS Avg	Freq	HS Avg	Freq	HS Avg	Freq	HS Avg			Freq	HS Avg	Freq	HS Avg	Freq	HS Avg
CENTENNIAL SCHOOL	6	64.0	81	70.1	8	70.5							2	62.9					97	69.6			97	69.6
BURNABY NORTH SECONDARY	4	66.5	27	67.2	50	67.9	8	65.6	1	63.3	1	68.3			2	68.0			93	67.8	1	74.0	94	67.8
PORT MOODY SECONDARY			48	65.8	2	69.8	1	80.3											51	66.3			51	66.4
BURNABY CENTRAL SECONDARY	2	47.3	38	65.8	29	68.9	10	63.6											79	66.2			79	66.6
NORTH DELTA SR. SECONDARY	67	70.5	24	68.8			4	65.9							1	83.8			96	70.1			96	70.1
TERRY FOX SECONDARY	1	64.5	52	71.4	1														54	70.0			54	71.2
QUEEN ELIZABETH SECONDARY	82	66.7	37	67.1			1	77.3	1	64.5									121	66.9			121	66.9
STEVESTON SR. SECONDARY	97	69.4	1	68.3			10	74.1											108	69.8			108	69.7
MATTHEW MCNAIR SECONDARY	65	69.1	1	36.5			6	65.2					2						74	66.4			74	68.1
KILLARNEY SECONDARY	10	62.0	21	65.6	11	68.4	34	66.5											76	65.9			76	65.9
RICHMOND SECONDARY	97	67.5	2	82.0	1	55.3	10	70.5											110	67.9			110	67.9
NEW WESTMINSTER SECONDARY	3	71.5	20	72.8			7	62.3	1										31	68.0			31	71.1
BURNABY SOUTH SECONDARY			22	64.3	8	69.9	6	67.1											36	66.0			36	66.2
SIR WINSTON CHURCHIL	20	59.4	2	74.2	2	58.8	18	66.9											42	63.3			42	63.5
DAVID THOMPSON SECONDARY	20	66.7	7	69.5	2	85.0	30	69.9			1	81.8			1	69.8			61	69.5			61	69.6
ERIC HAMBER SECONDARY	11	60.3	2	71.8	1	63.8	27	66.4					1						42	63.4	1	71.8	43	65.9
VANCOUVER TECHNICAL	2	71.3	5	58.4	29	65.8	9	68.7			1								46	64.4			46	65.6
SEAQUAM SECONDARY SCHOOL	29	68.1	6	65.3			2	78.7											37	68.2			37	68.3
CARIBOO HILL SECONDARY	1	54.3	25	65.9	1	64.5													27	65.4			27	65.2
ALPHA SECONDARY	1	68.3	5	64.0	16	68.3	3	64.8											25	67.0			25	67.6
CARSON GRAHAM SECONDARY	1		2	53.0	35	70.9	1	58.8											39	67.9			39	69.7
GLADSTONE SECONDARY	6	62.4	15	59.1	10	62.5	5	68.4			1	73.3							37	62.2			37	62.4
ARGYLE SECONDARY					40	76.7													40	76.7			40	76.7
JOHNSTON HEIGHTS SECONDARY	13	74.3	4	68.3															17	72.9			17	73.3
WINDERMERE SECONDARY	3	54.9	13	56.2	13	62.9	12	64.1											41	60.5			41	60.7
SEMIAHMOO SECONDARY	29	73.1	3	75.2					1	54.3									33	72.7			33	72.5
MAPLE RIDGE SECONDARY			15	68.1					3	67.9					1	80.0			19	68.7			19	69.0
OTHER SECONDARY SCHOOLS (< 1% Each)	385	67.7	174	65.8	286	69.7	176		117	71.9	32	73.6	21	63.1	2	70.4			1,193	58.4	382	68.8	1,575	69.3
TOTAL	955	67.8	652	66.8	545	69.3	380	67.4	124	71.5	36	73.7	26	63.1	7	73.7			2,725	68.0	384	71.8	3,109	68.6

Note: High School Average grade calculated on provincial exam scores in English 12 plus 3 other examinable courses with the highest grades.
Students with insufficient exam scores are excluded from the high school average, but included in the frequency counts.
These college transfer students graduated from secondary school from 1992 to 1999 and were admitted to SFU from 1994-2 to 1999-1.

Appendix B

Table B3. Distribution of B.C. College Transfer Students Admitted to SFU by College

College Name	HS Avg	Freq.	%	Cum %
Kwantlen University College	67.8	955	30.7%	30.7%
Douglas College	66.8	652	21.0%	51.7%
Capilano College	69.3	545	17.5%	69.2%
Vancouver Community College	67.4	380	12.2%	81.4%
University College of the Fraser Valley	71.5	124	4.0%	85.4%
Malaspina University-College	73.6	67	2.2%	87.6%
Okanagan University College	74.8	67	2.2%	89.7%
Cariboo College	71.5	64	2.1%	91.8%
College of New Caledonia	69.1	62	2.0%	93.8%
Comosun College	67.4	43	1.4%	95.2%
Columbia College (Private)	73.7	36	1.2%	96.3%
Northwest Community College	68.9	33	1.1%	97.4%
Coquitlam College (Private)	63.1	26	0.8%	98.2%
Northern Lights College	75.4	17	0.5%	98.8%
Selkirk College	74.3	15	0.5%	99.3%
College of the Rockies	77.5	8	0.3%	99.5%
North Island College	71.4	8	0.3%	99.8%
British Columbia Institute of Technology	73.7	7	0.2%	100.0%
Total	68.6	3,109	100.0%	200.0%

Note: These college transfer students graduated from secondary school from 1992 to 1999 and were admitted to SFU from 1994-2 to 1999-1. Students with insufficient exam scores are excluded from the high school average, but included in the frequency counts.

Appendix C

The Analysis File:

For simplicity of the analysis, a compact data file was created by extracting and summarizing relevant information from the relational database. The analysis file includes the following data elements:

Field Name	Description
StuID	SFU Student Number
BCPEN	Provincial Education Number
BOA	Basis of Admission (BC12 (7,335), BCASD (87), BCCOL (3,014), BCTEC (8)).
BOAGRP	Basis of Admission Group (BC12 or BCCOL). Note that BCASD, BCCOL and BCTEC are all included in BOAGRP = BCCOL.
BEST	The number of best examinable courses, in addition to English 12, used in the calculation of the high school admission average. There are 8,717 students with best=3, 1,367 with best=22 and 360 with best=1.
STANDARD	The grading standard used for the HSAVG. The values gold, silver and bronze correspond to use of English 12 plus the best 3, 2 or 1 examinable courses.
HSAVG	The vanilla high school admission average is based on the average of the provincial exam scores on EN 12 and 3 other examinable courses with the highest scores. If fewer than three other examinable courses were available, then two other or one other course was used in the average. When using HSAVG as a control variable, the analysis file will allow for excluding those with best < 3.

Depending upon the grading standard, here are the mean HSAVG's by BOAGRP:

Standard	BC12	(n)	BCCOL	(n)
Gold	78.33	6,571	68.59	2,146
Silver	77.90	7,228	67.71	2,856
Bronze	77.82	7,335	67.45	3,109

MAXCOLL	The college from which the maximum transfer credits were received at SFU.

Appendix C

Field Name	Description
TOTTFR	The total number of credits transferred to SFU upon admission.
TOTLOP	The total number of credits transferred to SFU after admission to SFU.
PSNAME	The name of the last post-secondary institution attended (if any).
PSLEFT	The year in which the student left the previous post-secondary institution.
ADMSEM	The semester of admission to SFU (1992-2 to 1992-2 for BC12's and 1994-2 to 1999-1 for BCCOL's).
ADMGPA	SFU admission grade point average.
SSPCT	SFU admission % grade for secondary school students.
SSNAME	Name of secondary school attended, according to SFU admission record. This is NOT necessarily the same school from which the provincial exam grades were recorded, especially since some students receive provincial exam grade marks from more than one school
SSGRAD	Year of graduation from a BC secondary school (1992 to 1996). In total for BC12's and BCCOL's, approximately 2,000 students graduated from high school in each of the five years.
DOB	Birth date.
AGEATADM	Age upon admission to SFU. On average, BC12's were 18 upon admission to SFU; BCCOL's were 21.
GENDER	Sex: 54% females; 45% male; 1% unknown.
VISA	Visa status: 88% domestic (blank); 10% permanent residents (P); 143 on student visa (S); 3 diplomats (D).
FAC1st	Faculty upon admission to SFU: APSC, ARTS, BUS, EDUC, SCI. 42 students with blank FAC1st indicate no faculty specified.
CRED1st	Credential upon admission to SFU. 42 students with blank CRED1st indicate no credential specified.

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Field Name	Description
PGM1st	Program sought upon admission to SFU. Only programs designated as Major, Honors, Joint Honors, Program, Concentration, or Co-op are included. Minors, Extended Minors, etc. are excluded. Only one program is provided in the file. If a student declared more than one program, the program is randomly selected.
BACHFAC	Faculty of 1st completed Bachelor's Degree at SFU. In total, 7,061 students in this study have completed a bachelor's degree between 1995-2 and 2002-3.
BACHCRED	Credential of 1st completed Bachelor's Degree at SFU.
BACHPGM	Program subject of 1st completed Bachelor's Degree at SFU. If multiple programs completed simultaneously, then a program is randomly selected. Includes Major, Joint Major, Honor, Joint Honor, Program, Concentration or Co-op.
BACHGSEM	Semester when 1st Bachelor's Degree completed at SFU.
CERTFAC	Faculty of 1st completed Certificate at SFU. In total, 1,371 students in this analysis have completed a certificate between 1994-1 and 2002-3.
CERTCRED	Name of 1st completed Certificate at SFU.
CERTGSEM	Semester when 1st Certificate completed at SFU.
PBDFAC	Faculty of 1st completed PBD at SFU. In total, 31 students in this study have completed a PBD between 1998-3 and 2002-3.
PBDCRED	Name of 1st completed PBD at SFU.
PBDGSEM	Semester when 1st PBD completed at SFU.
PDPFAC	Faculty of 1st completed PDP at SFU (EDUC). In total, 634 students in this study had completed a PDP between 1995-3 and 2002-3.
PDPCRED	Name of 1st completed PDP at SFU (PDP).
PDPGSEM	Semester when 1st PDP completed at SFU.

Appendix C

Field Name	Description
Grad1st	Semester of 1st completed credential (whichever came first, bachelor's degree, certificate, PDP or PBD). This is the minimum value of BACHGSEM, CERTGSEM, PDPGSEM and PBDGSEM. In total, 7148 students (68%) in this study have completed at least one credential between 1994-1 and 2002-3.
ENDSEM	Last semester. For those who have completed a credential, this is the semester of the 1st completed credential (Grad1st). For those who have not completed a credential, this is the last semester of registration/withdrawal at SFU. The minimum value is 1992-3 and the maximum value is 2002-3.
ENDSTAND	Last academic standing in ENDSEM.
ENDTFR	Total transfer credits accumulated, as at ENDSEM, including LOP credits. 25% of BC12's accumulated transfer credit, averaging 16 credits among those who earned transfer credit. All BCCOL transfer students had transfer credits at ENDSEM, ranging from 27 to 96 credits, for an average of 56 credits. In some cases, ENDTFR is not equal to TOTTFR. This occurs because, either: a) The student completed some LOP credits after their last semester of registration at SFU. In this case, the LOP credit would be included in TOTTFR, but excluded from ENDTFR. b) The student graduated from a credential, but continued to register and accumulate transfer or LOP credits. In this case, the TOTTFR would be equal to the total transfer credits earned in their career at SFU, but ENDTFR would only include those transfer credits earned up to and including the graduation semester.
ENDSFU	Total SFU credits completed, as at ENDSEM. 1% of BC12's (83 students) completed zero SFU credits; 0.2% of BCCOL's (22 students) completed zero SFU credits. On average BC12's completed 99 SFU credits; BCCOL's completed 69 SFU credits.
ENDTOT	Total credits completed, as at ENDSEM. This is the total of ENDTFR and ENDSFU. In total, BC12's and BCCOL's completed almost identical credits at 117.80 for BC12's and 117.22 for BCCOL's.

Appendix C

Field Name	Description
STARTCR	Number of transfer credits upon admission to SFU. On average, BCCOL transfer students entered SFU with 47 credits.
STARCRG	This is the range of transfer credits upon admission to SFU (00-30, 30-60, 40-70, 50-80, 60-90). This is used to select the appropriate set of college transfer students for comparing their CGPA on the first 30 credits at SFU (CGPA0030) to the CGPA of secondary school students in an equivalent range of SFU credits. For example, CGPA4070 for BC12's would be compared to CGPA0030 for the set of college transfer students who were admitted to sfu with a range of 40-70 credits upon admission to SFU.
CGPA0030	CGPA on 00 to 30 SFU credits.
CGPA0040	CGPA on 00 to 40 SFU credits.
CGPA0050	CGPA on 00 to 50 SFU credits.
CGPA060	CGPA on 00 to 60 SFU credits.
CGPA3060	CGPA on 30 to 60 SFU credits.
CGPA4070	CGPA on 40 to 70 SFU credits.
CGPA5080	CGPA on 50 to 80 SFU credits.
CGPA6090	CGPA on 60 to 90 SFU credits.
L60GPA	CGPA on last 60 SFU credits. For those who completed fewer than 60 credits at SFU, this CGPA is calculated on all credits completed at SFU. The CGPA on the last 60 credits at SFU was 2.75 for BC12's and 2.72 for BCCOL's. If students with fewer than 60 credits in the L60GPA are excluded, then the L60GPA is 3.02 for BC12's and 2.89 for BCCOL's.
L60HRS	The number of credit hours used in L60GPA. When using L60GPA as a control variable, this field allows us to exclude those with L60HRS < 60. Note that 26% of the cohort has fewer than 60 hours in the L60GPA. On average, among those students with 60 or more hours in their L60GPA, there are 62 credit hours included in this GPA.

Appendix C

Course Grades File:

The course grades file included SFU course grades for all students in the cohort. The file included the following data elements:

Field Name	Description
Stuid	SFU Student Number.
CrsName	SFU Course Name (eg. BUS, ECON, HIST).
CrsNum	SFU Course Number (eg. 237, 207, 300).
Sem	Semester course was completed.
Grade	SFU course grade
CrsGPA	Numerical equivalent for SFU course grade. For example, A+ translates to 4.33, A=4.00, etc.
BOAGrp	Basis of Admission Group (BC12 or BCCOL).
HSAvg	The vanilla high school admission average is based on the average of the provincial exam scores on EN 12 and the best 3 other examinable courses.
Standard	The grading standard used for the HSAVG. The values gold, silver and bronze correspond to use of English 12 plus the best 3, 2 or 1 examinable courses. Only students with a grading standard of "GOLD" were selected for the course grades analysis.
StartCr	Number of transfer credits upon admission to SFU.
CrAtt	Course credits attempted.
CrHrPass	Course credits passed.
CumPass	Cumulative SFU Hours Passed upon course completion.

Appendix D

Table D1:
Distribution of Students by Semester of Admisison to SFU and Secondary School Graduation Year

Stu Count		Sec Sch Grad Yr					
BOA Grp	Adm Sem	1992	1993	1994	1995	1996	Grand Total
BC12	1992-2	2					2
	1992-3	1,155	1				1,156
	1993-1	29					29
	1993-2	23	7				30
	1993-3		1,177				1,177
	1994-1		124				124
	1994-2		19	19			38
	1994-3			1,430			1,430
	1995-1			104	1	1	106
	1995-2			21	12		33
	1995-3				1,441		1,441
	1996-1				75	1	76
	1996-2				32	9	41
	1996-3					1,562	1,562
	1997-1					43	43
	1997-2					47	47
BC12 Total		**1,209**	**1,328**	**1,574**	**1,561**	**1,663**	**7,335**
BCCOL	1994-2	57	19				76
	1994-3	92	62	1			155
	1995-1	63	114	2		1	180
	1995-2	27	69	17	1		114
	1995-3	73	153	71	2		299
	1996-1	38	73	84	4		199
	1996-2	35	54	92	12		193
	1996-3	53	115	170	65	3	406
	1997-1	11	28	44	51	3	137
	1997-2	20	34	71	96	3	224
	1997-3	31	47	100	136	55	369
	1998-1	15	27	45	91	53	231
	1998-2	8	13	29	37	70	157
	1998-3	9	26	36	72	126	269
	1999-1	1	9	14	20	56	100
BCCOL Total		**533**	**843**	**776**	**587**	**370**	**3,109**
Grand Total		**1,742**	**2,171**	**2,350**	**2,148**	**2,033**	**10,444**

The Sample:

- The sample for this study includes 10,444 students who graduated from a BC secondary school in the five-year period from 1992 to 1996 and were later admitted to Simon Fraser University.
- This includes 7,333 BC12's who were admitted to SFU within one year of high school graduation (1992-2 to 1997-2) and 3,109 college transfer students (BCCOL's) who transferred to SFU from a BC College in semesters 1994-2 to 1999-1.

Note:
Adm Sem is the SFU Admission Semester denoted by the year and a semester number (1,2,3), where 1=Spring, 2=Summer and 3=Fall.

Appendix D

Table D2:
Distribution of Students Admitted to SFU by Average High School GPA

standard	GOLD
ssgrad	(All)
ssname	(All)

		BOA Grp		
Data	Sec Sch GPA	BC12	BCCOL	Grand Total
Student Count	LE 50	3	43	46
	51-60	68	296	364
	61-70	863	890	1,753
	71-80	2,967	706	3,673
	81-90	2,227	199	2,426
	91-100	443	12	455
% Distribution	LE 50	0.0%	2.0%	0.5%
	51-60	1.0%	13.8%	4.2%
	61-70	13.1%	41.5%	20.1%
	71-80	45.2%	32.9%	42.1%
	81-90	33.9%	9.3%	27.8%
	91-100	6.7%	0.6%	5.2%
Total Student Count		**6,571**	**2,146**	**8,717**
Total Average of hsavg		**78.3**	**68.6**	**75.9**

Highlights:
- 86% of students from secondary school and 43% of college transfer students entered SFU with a high school average above 70%.

Notes:

1. Average High School GPA is based on the average of the provincial exam scores on English 12 and the best 3 other examinable courses. This is the "Gold" standard. If fewer than three other examinable courses were available, then two or one other course was used in the average. These are the "Silver" or "Bronze" standard scores. Only the "Gold" standard secondary school averages are reported above.

2. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Appendix D

Table D3:
Age Distribution of Students Admitted to SFU

		BOA Grp		
Data	Age at Adm	BC12	BCCOL	Grand Total
Student Count	14	1		1
	15	2		2
	16	10		10
	17	224		224
	18	5,809	11	5,820
	19	970	252	1,222
	20	251	1,142	1,393
	21	48	910	958
	22	12	469	481
	23	4	228	232
	24	2	73	75
	25		15	15
	26		4	4
	27		4	4
	28	1		1
	31		1	1
	39	1		1
Total Student Count		**7,335**	**3,109**	**10,444**
Total Avg Age at SFU Adm		**18.2**	**20.9**	**19.0**

Highlights:
· The 2-year difference in average age between the two groups reflects the 2-year lag from high school graduation to SFU admission for college transfer students.

Note:

Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Appendix D

Table D4:
Gender Distribution of Students Admitted to SFU

		BOA Grp		
Data	gender	BC12	BCCOL	Grand Total
Student Count		4	18	22
	F	3,866	1,805	5,671
	M	3,465	1,286	4,751
% Distribution		0.1%	0.6%	0.2%
	F	52.7%	58.1%	54.3%
	M	47.2%	41.4%	45.5%
Total Student Count		**7,335**	**3,109**	**10,444**
Total % Distribution		100.0%	100.0%	100.0%

Highlights:
· Proportionately more females take the college transfer route to SFU. This is likely due to differences in program preferences.

Notes:

1. Blank indicates unspecified gender.

2. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Appendix D

Table D5:
Distribution of Students by Faculty Upon Admission to SFU

	BOA Grp Data					
	BC12		BCCOL		Total Student Count	Total % Distribution
fac1st	Student Count	% Distribution	Student Count	% Distribution		
APSC	1,215	16.6%	264	8.5%	1,479	14.2%
ARTS	2,641	36.0%	1,633	52.5%	4,274	40.9%
BUS	1,339	18.3%	711	22.9%	2,050	19.6%
EDUC	241	3.3%	159	5.1%	400	3.8%
SCI	1,881	25.6%	318	10.2%	2,199	21.1%
(blank)	18	0.2%	24	0.8%	42	0.4%
Grand Total	**7,335**	**100.0%**	**3,109**	**100.0%**	**10,444**	**100.0%**

Notes:

1. SFU Faculty Abbreviations: APSC=Applied Sciences, Arts=Arts, BUS=Business Administration, EDUC=Education, SCI=Science.

2. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Highlights:

- Students entering Applied Sciences and Science are twice as likely to be direct from secondary school (42%) than transferring from college (19%).

Appendix D

Table D6:
Distribution of Students by Crediential Upon Admission to SFU

	BOA Grp Data					
	BC12		BCCOL		Total Student Count	Total % Distribution
cred1st	Student Count	% Distribution	Student Count	% Distribution		
BA	2,625	35.8%	1,551	49.9%	4,176	40.0%
BSC	2,477	33.8%	430	13.8%	2,907	27.8%
BBA	1,339	18.3%	711	22.9%	2,050	19.6%
BED	239	3.3%	149	4.8%	388	3.7%
BSC(KINES)	235	3.2%	77	2.5%	312	3.0%
BASC	273	3.7%	5	0.2%	278	2.7%
BGS	50	0.7%	99	3.2%	149	1.4%
BFA	72	1.0%	45	1.4%	117	1.1%
(blank)	18	0.2%	24	0.8%	42	0.4%
PDP	2	0.0%	10	0.3%	12	0.1%
CERT(LIB ART)	3	0.0%	3	0.1%	6	0.1%
CERT(ACTUARIAL)		0.0%	2	0.1%	2	0.0%
CERT(URBAN)		0.0%	1	0.0%	1	0.0%
SPECIAL		0.0%	1	0.0%	1	0.0%
VISITING	1	0.0%		0.0%	1	0.0%
Grand Total	**7,335**	**100.0%**	**3,109**	**100.0%**	**10,444**	**100.0%**

Notes:

1. SFU Bachelor Degrees: BA=Bachelor of Arts, BSC=Science, BBA=Business Administration, BED=Education, BSC(Kines)=Bachelor of Science (Kinesiology), BASC=Applied Science, BGS=General Studies, BFA=Fine Arts.
2. PDP=Professional Development Program.
3. SFU Certificates: CERT(LIB ART)=Liberal Arts, CERT(Actuarial)=Actuarial Science, CERT(URBAN)=Urban Studies.
4. Blank denotes students who were admitted without a declared credential.
5. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Appendix D

Table D7:
Distribution of Students by Program Upon Admission to SFU

	BOA Grp Data					
	BC12		BCCOL		Total Student Count	Total % Distribution
pgm1st	Student Count	% Distribution	Student Count	% Distribution		
BUS	1,276	26.1%	692	28.2%	1,968	26.8%
BISC	456	9.3%	99	4.0%	555	7.6%
CMPT	439	9.0%	107	4.4%	546	7.4%
PSYC	262	5.4%	249	10.2%	511	7.0%
ENGL	309	6.3%	150	6.1%	459	6.3%
CRIM	165	3.4%	283	11.5%	448	6.1%
HIST	205	4.2%	130	5.3%	335	4.6%
KIN	228	4.7%	75	3.1%	303	4.1%
GEOG	124	2.5%	139	5.7%	263	3.6%
ENSC	251	5.1%	5	0.2%	256	3.5%
CMNS	113	2.3%	67	2.7%	180	2.5%
BICH	138	2.8%	21	0.9%	159	2.2%
POSC	103	2.1%	50	2.0%	153	2.1%
ECON	76	1.6%	53	2.2%	129	1.8%
MATH	70	1.4%	30	1.2%	100	1.4%
Others	535	11.0%	273	11.1%	808	11.0%
Subtotal	**4,881**	**100.0%**	**2,451**	**100.0%**	**7,332**	**100.0%**
Undeclared	2,454		658		3,112	
Total	7,335		3,109		10,444	

Note:

1. Table does not show individual programs with fewer than 100 students.
2. As a proportion of the total number of students in each admission category, 33.5% of BC12's and 21.2% of college transfer students did not have a declared program upon admission to SFU.
3. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Appendix D

Table D8:
Distribution of Credits Transferred to SFU Upon Admission to SFU

Data	Transfer Credits at SFU Adm	BOA Grp BC12	BCCOL	Grand Total
Student Count	None	5,528	4	5,532
	00 - 30	1,616	342	1,958
	31 - 40	78	680	758
	41 - 50	57	652	709
	51 - 60	49	1,281	1,330
	61 +	7	150	157
% Distribution	None	75.4%	0.1%	53.0%
	00 - 30	22.0%	11.0%	18.7%
	31 - 40	1.1%	21.9%	7.3%
	41 - 50	0.8%	21.0%	6.8%
	51 - 60	0.7%	41.2%	12.7%
	61 +	0.1%	4.8%	1.5%
Avg Tfr Credits	None	0.0	0.0	0.0
	00 - 30	11.1	29.6	14.3
	31 - 40	34.9	35.7	35.6
	41 - 50	45.4	45.2	45.2
	51 - 60	56.3	57.2	57.1
	61 +	69.0	66.2	66.3
Total Student Count		**7,335**	**3,109**	**10,444**
Total Avg Tfr Credits		**3.6**	**47.3**	**16.6**

Note:

1. Transfer credits for secondary school students includes 683 students with Advanced Placement or International Baccalaureate credits.
2. Among those secondary school students with transfer credits, a median of 9 credits were transferred.
3. The number of credits transferred is also positively correlated with the age of the student.
4. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).

Appendix D

Table D9: Distribution of SFU Baccalaureate Graduates by Secondary School Grad Year and SFU Graduation Semester (Includes High School Graduates of 1995 and 1996 only)

standard	GOLD

Student Count	BOA Grp	SS Grad					
	BC12		**BC12 Total**	BCCOL		**BCCOL Total**	**Grand Total**
Bach Grad	1995	1996		1995	1996		
(blank)	488	650	**1,138**	108	82	**190**	**1,328**
1997-3				1		**1**	**1**
1998-1	2	1	**3**	1	1	**2**	**5**
1998-2	7		**7**	2		**2**	**9**
1998-3	14		**14**	4		**4**	**18**
1999-1	64	2	**66**	21	1	**22**	**88**
1999-2	61	8	**69**	23		**23**	**92**
1999-3	83	12	**95**	26	3	**29**	**124**
2000-1	215	72	**287**	68	20	**88**	**375**
2000-2	116	80	**196**	32	16	**48**	**244**
2000-3	79	84	**163**	28	30	**58**	**221**
2001-1	158	209	**367**	62	43	**105**	**472**
2001-2	47	109	**156**	26	26	**52**	**208**
2001-3	43	85	**128**	14	27	**41**	**169**
2002-1	39	144	**183**	21	42	**63**	**246**
2002-2	23	72	**95**	8	8	**16**	**111**
2002-3	17	29	**46**	7	6	**13**	**59**
Grand Total	**1,456**	**1,557**	**3,013**	**452**	**305**	**757**	**3,770**
5-Yr Grads	446	468	**914**	146	114	**260**	**1,174**
6-Yr Grads	799	806	**1,605**	268	209	**477**	**2,082**
All Grads	968	907	**1,875**	344	223	**567**	**2,442**
5-Yr Grad %	30.6%	30.1%	**30.3%**	32.3%	37.4%	**34.3%**	**31.1%**
6-Yr Grad %	54.9%	51.8%	**53.3%**	59.3%	68.5%	**63.0%**	**55.2%**
% Bach Grad	66.5%	58.3%	**62.2%**	76.1%	73.1%	**74.9%**	**64.8%**

Highlights:
- College transfer students who would not persist to graduation were filtered out in college (and did not transfer to SFU), therefore secondary school students show lower graduation rates.

Notes:
1. Blank Bach Grad Sem indicates no SFU bachelors degree completed yet.
2. Bach Grad Sem indicates the semester of the first completed SFU bachelor's degree.
3. Includes students who completed high school in 1995 or 1996 only and were admitted to SFU from 1995-1 to 1997-2.

Appendix D

Table D10: Distribution of SFU Baccalaureate Graduates by Secondary School Grad Year and SFU Graduation Semester (Among students who completed at least 30 credits in total).

standard	GOLD

Student Count	BOA Grp SS Grad						
	BC12		BC12 Total	BCCOL		BCCOL Total	Grand Total
Bach Grad	1995	1996		1995	1996		
(blank)	320	421	741	107	82	189	930
1997-3				1		1	1
1998-1	2	1	3	1	1	2	5
1998-2	7		7	2		2	9
1998-3	14		14	4		4	18
1999-1	64	2	66	21	1	22	88
1999-2	61	8	69	23		23	92
1999-3	83	12	95	26	3	29	124
2000-1	215	72	287	68	20	88	375
2000-2	116	80	196	32	16	48	244
2000-3	79	84	163	28	30	58	221
2001-1	158	209	367	62	43	105	472
2001-2	47	109	156	26	26	52	208
2001-3	43	85	128	14	27	41	169
2002-1	39	144	183	21	42	63	246
2002-2	23	72	95	8	8	16	111
2002-3	17	29	46	7	6	13	59
Grand Total	1,288	1,328	2,616	451	305	756	3,372
5-Yr Grads	446	468	914	146	114	260	1,174
6-Yr Grads	799	806	1,605	268	209	477	2,082
7-Yr Grads	928			329			
All Grads	968	907	1,875	344	223	567	2,442
5-Yr Grad %	34.6%	35.2%	**34.9%**	32.4%	37.4%	**34.4%**	34.8%
6-Yr Grad %	62.0%	60.7%	**61.4%**	59.4%	68.5%	**63.1%**	61.7%
7-Yr Grad %	**72.0%**			**72.9%**			
% Bach Grad	75.2%	68.3%	71.7%	76.3%	73.1%	75.0%	72.4%

Highlights:

- By filtering out non-persisters from each admission group, the seven-year graduation rates of college transfer students and secondary school students are roughly equal at 72% or 73%.

Note:

1. Blank Bach Grad Sem indicates no SFU bachelors degree completed yet.
2. Bach Grad Sem indicates the semester of the first completed SFU bachelor's degree.
3. Includes students who completed high school in 1995 or 1996 only and were admitted to SFU from 1995-1 to 1997-2 and completed at least 30 credits in total.

Appendix D

Table D11: Distribution of SFU Baccalaureate Graduates by Faculty at Admission and Faculty at Graduation

			Grad Fac					
BOA Grp	Data	Enter Fac	APSC	ARTS	BUS	EDUC	SCI	Grand Total
BC12	Student Count	APSC	524	95	43	2	97	761
		ARTS	187	1,197	154	33	98	1,669
		BUS	78	355	558	4	17	1,012
		EDUC	2	108	3	38	7	158
		SCI	235	200	76	6	630	1,147
		(blank)					1	1
	% Distribution	APSC	69%	12%	6%	0%	13%	100%
		ARTS	11%	72%	9%	2%	6%	100%
		BUS	8%	35%	55%	0%	2%	100%
		EDUC	1%	68%	2%	24%	4%	100%
		SCI	20%	17%	7%	1%	55%	100%
		(blank)	0%	0%	0%	0%	100%	100%
BC12 Student Count			**1,026**	**1,955**	**834**	**83**	**850**	**4,748**
BC12 % Distribution			**22%**	**41%**	**18%**	**2%**	**18%**	**100%**
BCCOL	Student Count	APSC	139	20		1	17	177
		ARTS	36	1,131	72	18	8	1,265
		BUS	24	205	304		3	536
		EDUC	2	75		44		121
		SCI	22	23	7	1	152	205
		(blank)	1	7			1	9
	% Distribution	APSC	79%	11%	0%	1%	10%	100%
		ARTS	3%	89%	5%	2%	1%	100%
		BUS	4%	39%	56%	0%	1%	100%
		EDUC	2%	61%	0%	38%	0%	100%
		SCI	11%	12%	4%	1%	73%	100%
		(blank)	12%	76%	0%	0%	12%	100%
BCCOL Student Count			**224**	**1,461**	**383**	**64**	**181**	**2,313**
BCCOL % Distribution			**10%**	**63%**	**16%**	**3%**	**8%**	**100%**
Total Student Count			**1,250**	**3,416**	**1,217**	**147**	**1,031**	**7,061**

Highlights:

College transfer students had time while in college to determine what they wanted to pursue upon SFU admission. Therefore, college transfers are more likely to finish in the same SFU faculty as the one in which they were first admitted to..

Note:

1. Blank Enter Fac indicates no Faculty declared upon admission to SFU.
2. Includes students who graduated from a B.C. high school from 1992 to 1996 and were admitted directly to SFU (in semesters 1992-2 to 1997-2) or via transfer from college (admitted to SFU from 1994-2 to 1999-1).
3. Students who have not completed a bachelor's degree are excluded from this table.

Appendix E
Comparative Summary of Indicators:
BC Secondary School vs. BC College Transfer Students

Summary of Academic Performance Means:	BC12 N	BC12 Mean	BC12 StdDev	BCCOL N	BCCOL Mean	BCCOL StdDev	DIFFERENCE Mean	DIFFERENCE Sig	TOTAL N	TOTAL Mean
High School Avg. Grade (Avg. Prov. Exam Score)[1]	6,571	78.33	7.73	2,146	68.59	8.95	9.74	0.000	8,717	75.93
HSAvg < 75%	2,205	69.89	4.22	1,654	65.05	6.58	4.84	0.000	3,859	67.82
HS Avg >= 75%	4,366	82.59	5.17	492	80.51	4.39	2.08	0.000	4,858	82.38
SFU Admission GPA	6,571	3.36	0.36	2,146	3.02	0.36	0.34	0.000	8,717	3.28
HSAvg < 75%	2,204	3.09	0.23	1,654	2.95	0.32	0.14	0.000	3,858	3.03
HS Avg >= 75%	4,364	3.50	0.34	492	3.25	0.40	0.25	0.000	4,856	3.47
Total Transfer Credits	6,571	3.66	9.25	2,146	47.18	11.54	-43.52	0.000	8,717	14.37
Total LOP Credits	6,571	2.91	8.64	2,146	2.00	5.41	0.91	0.000	8,717	2.69
SFU Credits Completed	6,571	99.88	45.33	2,146	70.39	28.41	29.49	0.000	8,717	92.62
Total Credits Completed	6,571	103.31	45.68	2,146	117.51	28.87	-14.20	0.000	8,717	106.81
HSAvg < 75%	2,205	91.91	48.81	1,654	116.73	29.17	-24.82	0.000	3,859	102.55
HS Avg >= 75%	4,366	109.07	42.87	492	120.17	27.72	-11.10	0.000	4,858	110.19
Total Credits Completed at Bach Grad	4,297	129.29	18.27	1,605	129.27	13.5	0.02	0.958	5,902	129.28
HSAvg < 75%	1,263	125.95	17.78	1,224	128.76	14.31	-2.81	0.000	2,487	127.33
HS Avg >= 75%	3,034	130.68	18.29	381	130.90	12.72	-0.22	0.762	3,415	130.70
CGPA on First 30 SFU Credits[3]	6,500	2.72	0.72	2,132	2.64	0.56	0.08	0.000	8,632	2.70
HSAvg < 75%	2,171	2.40	0.68	1,644	2.56	0.53	-0.17	0.000	3,815	2.47
HS Avg >= 75%	4,329	2.88	0.68	488	2.89	0.57	-0.01	0.700	4,817	2.88
CGPA on Last 60 SFU Credits - Bach. Grads	2,480	3.12	0.48	899	2.93	0.43	0.19	0.000	3,379	3.07
HSAvg < 75%	701	2.88	0.41	675	2.86	0.40	0.02	0.023	1,376	2.87
HS Avg >= 75%	1,779	3.21	0.47	224	3.13	0.44	0.09	0.085	2,003	3.20
CGPA on Last 60 SFU Credits by Degree Completed:										
Bachelor of Arts	980	3.07	0.46	514	2.94	0.42	0.13	0.000	1,494	3.02
HSAvg < 75%	399	2.88	0.40	414	2.87	0.40	0.01	0.847	813	2.87
HS Avg >= 75%	581	3.20	0.45	100	3.20	0.42	0.00	0.998	681	3.20
Bachelor of Applied Science	105	3.52	0.36	1	3.51		0.01	0.971	106	3.52
HSAvg < 75%										
HS Avg >= 75%	105	3.52	0.36	1	3.51		0.01	0.971	106	3.52
Bachelor of Business Administration	414	3.13	0.38	160	2.92	0.33	0.21	0.000	574	3.07
HSAvg < 75%	102	2.99	0.36	118	2.88	0.33	0.10	0.029	220	2.93
HS Avg >= 75%	312	3.18	0.37	42	3.03	0.33	0.16	0.006	354	3.16
Bachelor of Education	53	3.23	0.43	17	3.30	0.35	-0.07	0.513	70	3.25
HSAvg < 75%	13	2.94	0.29	12	3.26	0.39	-0.33	0.029	25	3.09
HS Avg >= 75%	40	3.33	0.42	5	3.40	0.25	-0.07	0.617	45	3.34
Bachelor of Fine Arts	29	3.37	0.33	10	3.34	0.26	0.03	0.812	39	3.36
HSAvg < 75%	11	3.19	0.24	7	3.42	0.14	-0.23	0.020	18	3.28
HS Avg >= 75%	18	3.48	0.33	3	3.17	0.44	0.31	0.338	21	3.44
Bachelor of General Studies	34	2.70	0.47	35	2.68	0.49	0.02	0.871	69	2.69
HSAvg < 75%	16	2.61	0.34	33	2.66	0.50	-0.06	0.637	49	2.65
HS Avg >= 75%	18	2.78	0.56	2	2.90	0.21	-0.12	0.584	20	2.79

Appendix E
Comparative Summary of Indicators:
BC Secondary School vs. BC College Transfer Students

Summary of Academic Performance Means:	BC12 N	BC12 Mean	BC12 StdDev	BCCOL N	BCCOL Mean	BCCOL StdDev	DIFFERENCE Mean	DIFFERENCE Sig	TOTAL N	TOTAL Mean
CGPA on Last 60 SFU Credits by Degree Completed, cont.										
Bachelor of Science	675	3.11	0.53	133	2.85	0.48	0.25	0.000	808	3.06
HSAvg < 75%	112	2.78	0.48	70	2.67	0.36	0.11	0.088	182	2.73
HS Avg >= 75%	563	3.17	0.52	63	3.06	0.51	0.11	0.098	626	3.16
Bachelor of Science (Kinesiology)	186	3.21	0.46	29	3.09	0.42	0.12	0.164	215	3.19
HSAvg < 75%	46	3.02	0.45	21	3.08	0.36	-0.06	0.563	67	3.03
HS Avg >= 75%	140	3.27	0.44	8	3.12	0.59	0.15	0.500	148	3.26
Bach. Degree Completion Rates[4]										
5 - Year Completion Rate	2,616	20.7%	0.41	756	22.6%	0.42	-0.02	0.259	3,372	21.1%
6 - Year Completion Rate	2,616	48.4%	0.50	756	50.5%	0.50	-0.02	0.310	3,372	48.9%
7 - Year Completion Rate	1,288	72.1%	0.45	451	73.0%	0.44	-0.01	0.712	1,739	72.3%
% Early Leavers (<= 15 SFU Credits)	6,571	5.7%	0.23	2,146	7.3%	0.26	-1.6%	0.011	8,717	6.1%
HSAvg < 75%	2,205	9.5%	0.29	1,654	7.8%	0.27	1.7%	0.058	3,859	8.8%
HS Avg >= 75%	4,366	3.8%	0.19	492	5.7%	0.23	-1.9%	0.078	4,858	4.0%
University Failure Rate - All Students	6,571	10.9%	0.31	2,146	7.7%	0.27	3.2%	0.000	8,717	10.1%
HSAvg < 75%	2,205	18.6%	0.01	1,654	8.5%	0.28	10.1%	0.000	3,859	14.2%
HS Avg >= 75%	4,366	7.1%	0.00	492	5.3%	0.22	1.8%	0.102	4,858	6.9%
Univ Failure Rate after 30 Tot Cr Complete	5,709	5.0%	0.22	2,145	7.7%	0.27	-2.7%	0.000	7,854	5.7%
HSAvg < 75%	1,748	7.8%	0.27	1,654	8.5%	0.28	-0.6%	0.505	3,402	8.1%
HS Avg >= 75%	3,961	3.7%	0.19	491	5.1%	0.22	1.8%	0.184	4,452	3.9%

*Notes:

1. High school average grade is calculated on the average of provincial exam scores in Engl 12 plus best 3 academic grade 12 examinable courses.

2. Secondary school % is provided as a reference only. Where available on the SFU student record system, this is the blended high school average grade based on provincial exam scores and school grades.

3. The CGPA on the first 30 SFU credits have been adjusted such that the CGPA on the first 30 SFU credits for college transfer students is compared to the CGPA of an equivalent year-level block of 30-credits for direct entry secondary school students. A weighted average over all student year levels is calculated to provide a single indicator of CGPA on "first 30" SFU credits for each admission group.

4. Degree completion rates calculated for students with a high school grad year of 1995 or 1996, and admitted to SFU from 1995 - 1 to 1997 - 2 and completed more than 30 credits in total;

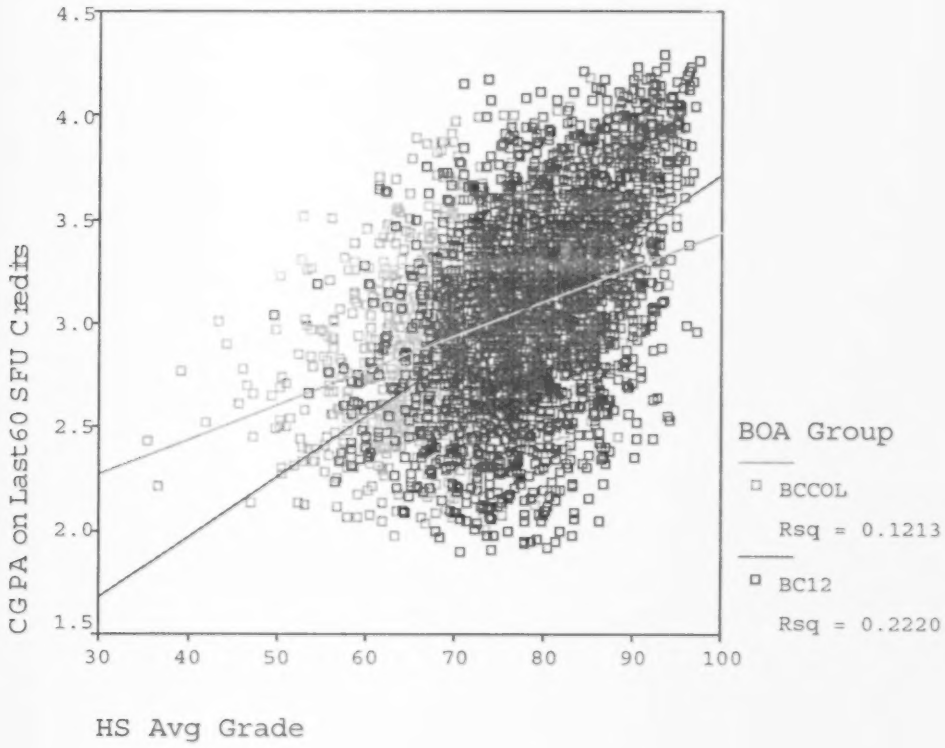
7 - year completion rate calculated for 1995 HS grads only.

5. All of the above indicators only includes students with a valid HSAvg calculated on Engl 12 plus best 3 grade 12 examinable courses.

Source: FreqAndMeans.sps, BachGrad.sps

Appendix F

CGPA on Last 60 SFU Credits (Bachelor's Completers) – Regression Results:



Parameter Estimates

Dependent Variable: CGPA on Last 60 SFU Credits (Baccalaureate Graduates Only)

BOA Group	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
BC12	Intercept	.801	.088	9.133	.000	.629	.972
	HSAVG	.029	.001	26.595	.000	.027	.031
BCCOL	Intercept	1.777	.104	17.039	.000	1.572	1.982
	HSAVG	.017	.001	11.128	.000	.014	.020

BC12: $CGPA_{L60} = 0.801 + (0.029 * HsAvgGrade)$ ($R^2 = .222$)

BCCOL: $CGPA_{L60} = 1.777 + (0.017 * HsAvgGrade)$ ($R^2 = .121$)

Appendix G
Table G1. Comparative Summary of Course Grades
BC Secondary School vs. BC College Transfer Students

	BC12			BCCOL			DIFFERENCE		TOTAL	
	N	Mean	StdDev	N	Mean	StdDev	Mean	Sig	N	Mean
Summary of Course Grade Means:										
All SFU Courses Combined	169,344	2.89	0.85	47,111	2.78	0.81	0.11	0.000	216,455	2.87
Lower High School Achievers (< 75%)	51,930	2.64	0.84	36,014	2.71	0.80	-0.07	0.000	87,944	2.67
Upper High School Achievers (>= 75%)	117,370	3.01	0.82	11,097	3.00	0.82	0.01	0.401	128,467	3.01
100-Level SFU Courses	66,608	2.76	0.87	9,665	2.67	0.85	0.08	0.000	76,273	2.75
Lower High School Achievers (< 75%)	21,625	2.47	0.86	7,667	2.62	0.84	-0.15	0.000	29,292	2.51
Upper High School Achievers (>= 75%)	44,983	2.90	0.84	1,998	2.88	0.87	0.01	0.539	46,981	2.90
200-Level SFU Courses	39,137	2.86	0.85	11,303	2.64	0.81	0.22	0.000	50,440	2.81
Lower High School Achievers (< 75%)	11,638	2.61	0.81	8,654	2.56	0.80	0.05	0.000	20,292	2.59
Upper High School Achievers (>= 75%)	27,499	2.97	0.84	2,649	2.89	0.82	0.08	0.000	30,148	2.96
300-Level SFU Courses	46,863	3.01	0.79	19,082	2.80	0.77	0.20	0.000	65,945	2.95
Lower High School Achievers (< 75%)	13,972	2.79	0.78	14,397	2.74	0.75	0.05	0.000	28,369	2.76
Upper High School Achievers (>= 75%)	32,891	3.10	0.78	4,685	3.01	0.80	0.08	0.000	37,576	3.09
400-Level SFU Courses	16,504	3.21	0.75	7,061	3.07	0.76	0.13	0.015	23,565	3.17
Lower High School Achievers (< 75%)	4,695	3.05	0.78	5,296	3.01	0.76	0.04	0.064	9,991	3.03
Upper High School Achievers (>= 75%)	11,809	3.27	0.73	1,765	3.26	0.74	0.01	0.714	13,574	3.27
Grade Distribution in All SFU Courses										
% A's (A+, A, A-)	169,344	24.8%	0.43	47,162	18.3%	0.39	6.5%	0.000	216,506	23.4%
Lower High School Achievers (< 75%)	51,974	13.8%	0.35	69,050	15.0%	0.36	-1.2%	0.000	121,024	14.5%
Upper High School Achievers (>= 75%)	117,370	29.6%	0.46	11,112	29.0%	0.45	0.6%	0.160	128,482	29.6%
% B's (B+, B, B-)	169,344	45.5%	0.50	47,162	48.0%	0.50	-2.5%	0.000	216,506	46.0%
Lower High School Achievers (< 75%)	51,974	45.3%	0.50	36,050	48.3%	0.50	-3.0%	0.000	88,024	46.6%
Upper High School Achievers (>= 75%)	117,370	45.6%	0.50	11,112	46.9%	0.50	-1.3%	0.009	128,482	45.7%
% C's (C+, C, C-)	169,344	25.6%	0.44	47,162	29.3%	0.46	-3.7%	0.000	216,506	26.4%
Lower High School Achievers (< 75%)	51,974	34.8%	0.48	36,050	31.9%	0.47	2.8%	0.000	88,024	33.6%
Upper High School Achievers (>= 75%)	117,370	21.6%	0.41	11,112	20.8%	0.41	0.8%	0.055	128,482	21.5%
% D, F, N	169,344	4.0%	0.20	47,162	4.3%	0.20	-0.3%	0.001	216,506	4.0%
Lower High School Achievers (< 75%)	51,974	6.0%	0.24	36,050	4.7%	0.21	1.3%	0.000	88,024	5.4%
Upper High School Achievers (>= 75%)	117,370	3.1%	0.17	11,112	3.2%	0.18	-0.1%	0.410	128,482	3.1%
Course Failure Rate (Grade = F or N):										
All Courses	169,112	2.0%	0.14	47,111	2.0%	0.14	0.0%	0.756	216,223	2.0%
Lower High School Achievers (< 75%)	51,930	3.0%	0.17	36,014	2.1%	0.14	0.9%	0.000	87,944	2.6%
Upper High School Achievers (>= 75%)	117,182	1.6%	0.13	11,097	1.7%	0.13	-0.1%	0.565	128,279	1.6%
100-Level Courses Only	66,608	2.7%	0.16	9,665	2.9%	0.17	-0.2%	0.240	76,273	2.7%
Lower High School Achievers (< 75%)	21,625	4.3%	0.20	7,667	3.0%	0.17	1.3%	0.000	29,292	3.9%
Upper High School Achievers (>= 75%)	44,983	2.0%	0.14	1,998	2.6%	0.16	-0.7%	0.070	46,981	2.0%
200-, 300- and 400-Level Courses	102,504	1.6%	0.12	37,443	1.8%	0.13	-0.2%	0.020	139,947	1.6%
Lower High School Achievers (< 75%)	30,305	2.1%	0.14	28,347	1.9%	0.13	0.2%	0.079	58,652	2.0%
Upper High School Achievers (>= 75%)	72,199	1.4%	0.12	9,099	1.5%	0.12	-0.1%	0.517	81,298	1.4%
% Unsatisfactory Grades (C-, D, F, N)										
All Courses	169,112	8.5%	0.28	47,111	9.9%	0.30	-1.4%	0.000	216,223	8.8%
Lower High School Achievers (< 75%)	51,930	12.7%	0.33	36,014	10.8%	0.31	1.9%	0.000	87,944	11.9%
Upper High School Achievers (>= 75%)	117,182	6.7%	0.25	11,097	7.0%	0.25	-0.3%	0.228	128,279	6.7%
100-Level Courses Only	66,608	10.8%	0.31	9,665	12.3%	0.33	-1.5%	0.000	76,273	11.0%
Lower High School Achievers (< 75%)	21,625	16.5%	0.37	7,667	13.2%	0.34	3.3%	0.000	29,292	15.6%
Upper High School Achievers (>= 75%)	44,983	8.1%	0.27	1,998	9.0%	0.29	-0.9%	0.179	46,981	8.2%
200-, 300- and 400-Level Courses	102,504	7.0%	0.26	37,446	9.2%	0.29	-2.2%	0.000	139,950	7.6%
Lower High School Achievers (< 75%)	30,305	10.0%	0.30	28,347	10.1%	0.30	-0.1%	0.598	58,652	10.0%
Upper High School Achievers (>= 75%)	72,199	5.8%	0.23	9,099	6.5%	0.25	-0.8%	0.005	81,298	5.9%

Appendix G

Table G2. Comparative Summary of Course Grades (N>20): BC Secondary School vs. BC College Transfer Students

	BC12			BCCOL			DIFFERENCE		TOTAL	
COURSE	N	Mean	StdDev	N	Mean	StdDev	Mean	Sig	N	Mean
BICH 221	212	3.22	0.756	46	2.85	0.677	0.38	0.001	258	3.16
Lower HS Achievers	52	2.84	0.675	28	2.80	0.637	0.04	0.782	80	2.82
Upper HS Achievers	160	3.35	0.741	18	2.93	0.746	0.42	0.033	178	3.30
BUEC 232	932	2.86	0.748	346	2.68	0.709	0.18	0.000	1,278	2.81
Lower HS Achievers	347	2.65	0.691	286	2.62	0.694	0.03	0.622	633	2.63
Upper HS Achievers	585	2.99	0.752	60	2.95	0.723	0.04	0.710	645	2.98
BUEC 333	920	2.98	0.789	470	2.76	0.748	0.21	0.000	1,390	2.91
Lower HS Achievers	308	2.70	0.779	377	2.70	0.736	0.00	0.941	685	2.70
Upper HS Achievers	612	3.12	0.756	93	3.01	0.749	0.11	0.201	705	3.10
BUS 207	411	2.84	0.814	176	2.41	0.928	0.44	0.000	587	2.71
Lower HS Achievers	106	2.57	0.879	129	2.31	0.898	0.25	0.030	235	2.43
Upper HS Achievers	305	2.94	0.769	47	2.66	0.969	0.28	0.066	352	2.90
BUS 237	1352	2.73	0.784	354	2.53	0.718	0.20	0.000	1,706	2.68
Lower HS Achievers	450	2.46	0.729	281	2.49	0.742	-0.03	0.591	731	2.47
Upper HS Achievers	902	2.86	0.778	73	2.68	0.598	0.17	0.022	975	2.84
BUS 251	934	2.78	0.839	217	2.63	0.784	0.15	0.011	1,151	2.75
Lower HS Achievers	332	2.49	0.800	173	2.60	0.758	-0.11	0.123	505	2.53
Upper HS Achievers	602	2.94	0.819	44	2.71	0.882	0.23	0.106	646	2.92
BUS 254	1000	2.80	0.788	365	2.50	0.702	0.31	0.000	1,365	2.72
Lower HS Achievers	291	2.56	0.721	291	2.47	0.693	0.09	0.110	582	2.51
Upper HS Achievers	709	2.91	0.793	74	2.63	0.729	0.28	0.003	783	2.88
BUS 272	972	2.83	0.728	255	2.65	0.621	0.18	0.000	1,227	2.79
Lower HS Achievers	325	2.63	0.639	211	2.62	0.624	0.01	0.852	536	2.62
Upper HS Achievers	647	2.93	0.749	44	2.83	0.578	0.10	0.281	691	2.93
BUS 303	212	3.10	0.632	110	2.91	0.602	0.18	0.012	322	3.03
Lower HS Achievers	47	2.91	0.694	86	2.92	0.580	-0.01	0.902	133	2.92
Upper HS Achievers	165	3.15	0.604	24	2.89	0.686	0.26	0.085	189	3.12
BUS 312	416	3.10	0.792	188	2.85	0.709	0.25	0.000	604	3.02
Lower HS Achievers	87	2.75	0.740	139	2.79	0.673	-0.04	0.684	226	2.77
Upper HS Achievers	329	3.19	StdDev	49	3.02	0.786	0.17	0.161	378	3.17
BUS 316	33	3.20	0.565	22	3.01	0.739	0.19	0.319	55	3.13
Lower HS Achievers	5	3.27	0.724	19	2.91	0.719	0.35	0.365	24	2.99
Upper HS Achievers	28	3.19	0.548	3	3.67	0.577	-0.48	0.286	31	3.24
BUS 336	439	3.03	0.778	193	2.79	0.717	0.24	0.000	632	2.95
Lower HS Achievers	103	2.69	0.823	142	2.67	0.691	0.02	0.848	245	2.68
Upper HS Achievers	336	3.13	0.735	51	3.12	0.693	0.01	0.914	387	3.13
BUS 343	465	3.09	0.698	179	2.83	0.647	0.27	0.000	644	3.02
Lower HS Achievers	108	2.95	0.724	136	2.79	0.639	0.16	0.065	244	2.86
Upper HS Achievers	357	3.14	0.685	43	2.95	0.665	0.18	0.095	400	3.12
BUS 360	215	2.88	0.496	118	2.82	0.560	0.06	0.370	333	2.86
Lower HS Achievers	51	2.83	0.454	92	2.80	0.535	0.03	0.700	143	2.81
Upper HS Achievers	164	2.89	0.509	26	2.91	0.644	-0.02	0.893	190	2.89
BUS 374	61	3.20	0.600	29	3.04	0.330	0.16	0.117	90	3.15
Lower HS Achievers	14	2.81	0.903	27	3.05	0.342	-0.24	0.353	41	2.97
Upper HS Achievers	47	3.32	0.423	2	3.00	0.000	0.32	0.000	49	3.30

Appendix G

Table G2. Comparative Summary of Course Grades (N>20): BC Secondary School vs. BC College Transfer Students

	BC12			BCCOL			DIFFERENCE		TOTAL	
COURSE	N	Mean	StdDev	N	Mean	StdDev	Mean	Sig	N	Mean
BUS 381	164	3.07	0.667	68	2.77	0.629	0.30	0.001	232	2.98
Lower HS Achievers	42	2.91	0.783	46	2.70	0.585	0.21	0.162	88	2.80
Upper HS Achievers	122	3.13	0.616	22	2.91	0.707	0.22	0.184	144	3.09
BUS 393	37	3.11	0.497	23	2.98	0.598	0.12	0.415	60	3.06
Lower HS Achievers	7	3.00	0.577	20	2.92	0.561	0.08	0.745	27	2.94
Upper HS Achievers	30	3.13	0.484	3	3.44	0.768	-0.31	0.558	33	3.16
BUS 478	339	3.15	0.562	165	3.07	0.639	0.08	0.149	504	3.13
Lower HS Achievers	79	3.06	0.562	125	3.06	0.636	0.00	0.992	204	3.06
Upper HS Achievers	260	3.18	0.560	40	3.09	0.658	0.09	0.407	300	3.17
CHEM 150	251	2.88	1.006	52	2.61	1.034	0.27	0.086	303	2.83
Lower HS Achievers	62	2.62	1.082	33	2.53	1.037	0.09	0.698	95	2.59
Upper HS Achievers	189	2.97	0.968	19	2.74	1.045	0.23	0.368	208	2.94
CHEM 155	217	2.98	0.710	52	2.67	0.706	0.30	0.007	269	2.92
Lower HS Achievers	45	2.87	0.588	31	2.68	0.561	0.19	0.161	76	2.79
Upper HS Achievers	172	3.00	0.737	21	2.67	0.895	0.34	0.109	193	2.97
CMNS 110	25	2.83	0.594	21	3.03	0.586	-0.20	0.247	46	2.92
Lower HS Achievers	12	2.61	0.547	17	3.00	0.577	-0.39	0.077	29	2.84
Upper HS Achievers	13	3.02	0.585	4	3.17	0.695	-0.14	0.731	17	3.06
CRIM 101	164	2.72	0.640	23	2.80	0.501	-0.08	0.501	187	2.73
Lower HS Achievers	68	2.57	0.694	20	2.78	0.511	-0.21	0.139	88	2.62
Upper HS Achievers	96	2.82	0.580	3	2.89	0.510	-0.06	0.848	99	2.82
ECON 105	58	2.65	1.021	21	2.60	0.750	0.05	0.825	79	2.64
Lower HS Achievers	14	2.81	0.595	14	2.52	0.748	0.29	0.272	28	2.67
Upper HS Achievers	44	2.60	1.124	7	2.76	0.786	-0.16	0.642	51	2.62
ECON 210	335	2.96	0.812	152	2.53	0.771	0.42	0.000	487	2.82
Lower HS Achievers	136	2.63	0.804	128	2.43	0.736	0.21	0.029	264	2.53
Upper HS Achievers	199	3.18	0.743	24	3.10	0.719	0.08	0.611	223	3.17
ECON 290	28	2.53	0.935	26	2.55	0.789	-0.02	0.947	54	2.54
Lower HS Achievers	13	2.38	0.901	19	2.61	0.819	-0.23	0.470	32	2.52
Upper HS Achievers	15	2.67	0.976	7	2.38	0.731	0.29	0.457	22	2.57
ECON 291	28	2.89	0.703	21	2.59	0.802	0.31	0.172	49	2.76
Lower HS Achievers	11	2.61	0.533	16	2.50	0.730	0.11	0.667	27	2.54
Upper HS Achievers	17	3.08	0.750	5	2.87	1.044	0.21	0.689	22	3.03
ECON 301	280	2.78	0.909	169	2.76	0.655	0.02	0.757	449	2.77
Lower HS Achievers	133	2.52	0.868	145	2.71	0.653	-0.19	0.043	278	2.62
Upper HS Achievers	147	3.01	0.884	24	3.04	0.601	-0.03	0.858	171	3.02
ECON 305	216	2.95	0.760	133	2.81	0.721	0.14	0.087	349	2.90
Lower HS Achievers	102	2.80	0.714	114	2.79	0.738	0.01	0.936	216	2.79
Upper HS Achievers	114	3.09	0.775	19	2.96	0.598	0.13	0.414	133	3.07
ECON 325	24	3.76	0.387	23	3.45	0.528	0.32	0.025	47	3.61
Lower HS Achievers	11	3.60	0.467	21	3.40	0.523	0.21	0.260	32	3.47
Upper HS Achievers	13	3.90	0.252	2	4.00	0.000	-0.10	0.165	15	3.91
ECON 342	81	3.07	0.848	52	2.94	0.688	0.13	0.327	133	3.02
Lower HS Achievers	42	3.01	0.847	46	2.90	0.688	0.11	0.509	88	2.95
Upper HS Achievers	39	3.14	0.854	6	3.28	0.648	-0.13	0.668	45	3.16

Appendix G

Table G2. Comparative Summary of Course Grades (N>20): BC Secondary School vs. BC College Transfer Students

	BC12			BCCOL			DIFFERENCE		TOTAL	
COURSE	N	Mean	StdDev	N	Mean	StdDev	Mean	Sig	N	Mean
ECON 345	186	2.89	0.922	104	2.74	0.786	0.16	0.131	290	2.84
Lower HS Achievers	68	2.64	0.871	91	2.69	0.768	-0.05	0.699	159	2.67
Upper HS Achievers	118	3.04	0.921	13	3.08	0.863	-0.04	0.884	131	3.04
ECON 382	48	2.84	0.766	28	2.57	0.972	0.27	0.217	76	2.74
Lower HS Achievers	33	2.79	0.753	25	2.55	0.980	0.24	0.314	58	2.68
Upper HS Achievers	15	2.95	0.806	3	2.78	1.072	0.18	0.806	18	2.93
ECON 390	58	3.07	0.645	50	3.11	0.790	-0.04	0.792	108	3.09
Lower HS Achievers	37	3.04	0.663	44	3.07	0.799	-0.02	0.891	81	3.06
Upper HS Achievers	21	3.11	0.626	6	3.39	0.713	-0.28	0.414	27	3.17
EDUC 220	373	2.71	0.977	188	2.69	0.880	0.02	0.802	561	2.70
Lower HS Achievers	164	2.52	0.959	163	2.60	0.829	-0.08	0.402	327	2.56
Upper HS Achievers	209	2.86	0.968	25	3.27	0.995	-0.41	0.062	234	2.90
EDUC 326	118	3.37	0.621	83	3.59	0.470	-0.22	0.005	201	3.46
Lower HS Achievers	56	3.26	0.735	71	3.56	0.475	-0.30	0.010	127	3.43
Upper HS Achievers	62	3.47	0.481	12	3.78	0.411	-0.31	0.033	74	3.52
EDUC 472	23	3.62	0.623	27	3.54	0.490	0.08	0.619	50	3.58
Lower HS Achievers	7	3.76	0.418	19	3.49	0.463	0.27	0.181	26	3.56
Upper HS Achievers	16	3.56	0.697	8	3.67	0.563	-0.10	0.702	24	3.60
ENGL 204	65	3.30	0.684	26	2.96	0.824	0.34	0.386	91	3.20
Lower HS Achievers	14	3.00	0.961	17	2.78	0.865	0.22	0.521	31	2.88
Upper HS Achievers	51	3.38	0.572	9	3.30	0.655	0.09	0.710	60	3.37
ENGL 312	35	3.28	0.539	21	3.09	0.851	0.18	0.069	56	3.21
Lower HS Achievers	15	2.93	0.402	14	2.83	0.913	0.10	0.709	29	2.88
Upper HS Achievers	20	3.53	0.489	7	3.62	0.358	-0.08	0.636	27	3.55
GEOG 327	22	3.41	0.712	26	3.24	0.486	0.17	0.362	48	3.32
Lower HS Achievers	12	3.31	0.858	22	3.17	0.434	0.14	0.608	34	3.22
Upper HS Achievers	10	3.53	0.502	4	3.67	0.608	-0.13	0.717	14	3.57
HIST 101	57	3.29	0.932	21	3.13	0.654	0.17	0.385	78	3.25
Lower HS Achievers	22	3.09	1.019	14	2.98	0.672	0.11	0.686	36	3.05
Upper HS Achievers	35	3.42	0.864	7	3.43	0.535	-0.01	0.968	42	3.42
KIN 110	462	3.21	0.913	138	3.10	0.767	0.11	0.176	600	3.18
Lower HS Achievers	155	2.95	0.861	110	3.04	0.734	-0.09	0.360	265	2.99
Upper HS Achievers	307	3.34	0.914	28	3.33	0.861	0.00	0.982	335	3.34
KIN 140	66	3.17	0.692	21	2.95	0.590	0.22	0.163	87	3.12
Lower HS Achievers	26	2.86	0.772	19	2.89	0.568	-0.04	0.859	45	2.87
Upper HS Achievers	40	3.37	0.556	2	3.50	0.707	-0.13	0.843	42	3.38
KIN 143	43	3.01	0.848	21	2.89	0.694	0.13	0.526	64	2.97
Lower HS Achievers	14	2.90	0.909	14	2.62	0.611	0.29	0.338	28	2.76
Upper HS Achievers	29	3.07	0.828	7	3.43	0.534	-0.36	0.179	36	3.14
LING 100	607	3.19	0.619	237	3.16	0.642	0.03	0.522	844	3.19
Lower HS Achievers	236	3.02	0.630	207	3.15	0.655	-0.13	0.035	443	3.08
Upper HS Achievers	371	3.31	0.586	30	3.27	0.542	0.04	0.689	401	3.30
LING 110	838	3.13	0.723	313	3.10	0.637	0.03	0.508	1,151	3.12
Lower HS Achievers	313	2.91	0.805	263	3.07	0.642	-0.16	0.009	576	2.98
Upper HS Achievers	525	3.26	0.634	50	3.28	0.585	-0.02	0.831	575	3.26

Appendix G

Table G2. Comparative Summary of Course Grades (N>20): BC Secondary School vs. BC College Transfer Students

	BC12			BCCOL			DIFFERENCE		TOTAL	
COURSE	N	Mean	StdDev	N	Mean	StdDev	Mean	Sig	N	Mean
LING 220	131	2.93	0.959	63	2.93	0.870	0.00	1.000	194	2.93
Lower HS Achievers	54	2.77	0.908	50	2.86	0.765	-0.09	0.591	104	2.81
Upper HS Achievers	77	3.04	0.984	13	3.20	1.190	-0.16	0.650	90	3.07
MACM 101	48	2.73	0.827	25	2.84	0.913	-0.11	0.614	73	2.77
Lower HS Achievers	6	2.00	1.095	10	2.67	0.648	-0.67	0.217	16	2.42
Upper HS Achievers	42	2.83	0.741	15	2.95	1.060	-0.12	0.685	57	2.86
PHIL 001	107	2.88	0.943	54	2.81	0.841	0.07	0.651	161	2.86
Lower HS Achievers	43	2.51	0.927	42	2.73	0.752	-0.22	0.235	85	2.62
Upper HS Achievers	64	3.13	0.876	12	3.11	1.086	0.02	0.957	76	3.13
POL 100	31	2.63	0.871	24	3.00	0.851	-0.37	0.124	55	2.79
Lower HS Achievers	17	2.65	1.057	20	2.98	0.875	-0.34	0.306	37	2.83
Upper HS Achievers	14	2.62	0.611	4	3.08	0.833	-0.46	0.359	18	2.72
PSYC 201	339	2.91	0.840	218	2.65	0.912	0.26	0.001	557	2.81
Lower HS Achievers	154	2.75	0.816	169	2.49	0.867	0.26	0.007	323	2.61
Upper HS Achievers	185	3.04	0.839	49	3.20	0.858	-0.16	0.259	234	3.07
PSYC 221	194	3.01	0.812	136	2.60	0.783	0.41	0.000	330	2.84
Lower HS Achievers	83	2.71	0.811	112	2.48	0.738	0.23	0.044	195	2.58
Upper HS Achievers	111	3.23	0.743	24	3.14	0.779	0.09	0.611	135	3.21
PSYC 241	97	2.92	0.822	52	2.72	0.791	0.20	0.157	149	2.85
Lower HS Achievers	39	2.67	0.800	40	2.59	0.804	0.08	0.646	79	2.63
Upper HS Achievers	58	3.09	0.801	12	3.17	0.578	-0.08	0.688	70	3.10
PSYC 250	180	3.04	0.705	125	2.77	0.612	0.26	0.001	305	2.93
Lower HS Achievers	78	2.89	0.655	111	2.78	0.559	0.12	0.209	189	2.82
Upper HS Achievers	102	3.15	0.723	14	2.76	0.964	0.39	0.164	116	3.11
PSYC 260	46	3.04	0.965	27	2.65	0.543	0.39	0.030	73	2.90
Lower HS Achievers	20	2.50	1.084	22	2.60	0.551	-0.11	0.698	42	2.55
Upper HS Achievers	26	3.46	0.605	5	2.86	0.506	0.60	0.055	31	3.36
PSYC 270	72	2.96	0.753	45	2.69	0.957	0.27	0.114	117	2.85
Lower HS Achievers	28	2.83	0.639	36	2.51	0.907	0.32	0.099	64	2.65
Upper HS Achievers	44	3.04	0.814	9	3.41	0.846	-0.37	0.253	53	3.10
PSYC 302	32	3.18	0.767	31	2.69	0.865	0.49	0.021	63	2.94
Lower HS Achievers	14	3.00	0.716	29	2.63	0.856	0.37	0.150	43	2.75
Upper HS Achievers	18	3.31	0.796	2	3.50	0.707	-0.19	0.775	20	3.33
PSYC 306	25	3.08	0.722	21	2.59	0.822	0.49	0.039	46	2.85
Lower HS Achievers	11	3.03	0.641	16	2.56	0.814	0.47	0.109	27	2.75
Upper HS Achievers	14	3.12	0.802	5	2.67	0.942	0.45	0.375	19	3.00
PSYC 307	21	2.90	0.996	21	3.13	1.030	-0.22	0.480	42	3.01
Lower HS Achievers	8	2.50	0.534	16	3.06	1.124	-0.56	0.110	24	2.87
Upper HS Achievers	13	3.15	1.144	5	3.33	0.708	-0.18	0.697	18	3.20
PSYC 345	86	3.03	0.900	47	2.69	0.991	0.35	0.050	133	2.91
Lower HS Achievers	32	2.84	0.908	42	2.59	0.997	0.25	0.268	74	2.70
Upper HS Achievers	54	3.15	0.885	5	3.47	0.506	-0.32	0.257	59	3.17
PSYC 355	31	3.01	0.791	23	3.00	0.816	0.01	0.964	54	3.01
Lower HS Achievers	17	3.00	0.736	17	2.92	0.917	0.08	0.787	34	2.96
Upper HS Achievers	14	3.02	0.882	6	3.22	0.404	-0.20	0.498	20	3.08

Appendix G

Table G2. Comparative Summary of Course Grades (N>20): BC Secondary School vs. BC College Transfer Students

	BC12			BCCOL			DIFFERENCE		TOTAL	
COURSE	N	Mean	StdDev	N	Mean	StdDev	Mean	Sig	N	Mean
PSYC 356	25	2.96	1.046	26	3.02	0.914	-0.07	0.811	51	2.99
Lower HS Achievers	13	2.82	0.977	18	2.85	0.931	-0.03	0.929	31	2.84
Upper HS Achievers	12	3.11	1.140	8	3.42	0.791	-0.31	0.486	20	3.23
PSYC 357	35	2.83	1.004	26	3.27	0.626	-0.44	0.039	61	3.02
Lower HS Achievers	17	2.84	0.958	20	3.15	0.616	-0.31	0.266	37	3.01
Upper HS Achievers	18	2.81	1.074	6	3.67	0.516	-0.85	0.018	24	3.03
PSYC 369	91	3.06	0.975	75	2.86	0.826	0.20	0.155	166	2.97
Lower HS Achievers	45	3.07	0.838	65	2.75	0.808	0.33	0.045	110	2.88
Upper HS Achievers	46	3.05	1.102	10	3.60	0.516	-0.55	0.023	56	3.15
PSYC 385	124	3.21	0.833	77	2.92	0.802	0.29	0.016	201	3.10
Lower HS Achievers	50	3.06	0.749	60	2.83	0.709	0.23	0.109	110	2.94
Upper HS Achievers	74	3.31	0.875	17	3.23	1.033	0.08	0.782	91	3.30
STAT 301	402	3.16	0.689	78	2.91	0.765	0.25	0.008	480	3.12
Lower HS Achievers	82	2.82	0.681	52	2.77	0.731	0.05	0.704	134	2.7975
Upper HS Achievers	320	3.25	0.664	26	3.19	0.767	0.06	0.710	346	3.2446

Table G3. Comparison of Average Course Grades in Selected SFU Courses, by High School Average
For Students Who Completed Secondary School from 1992 to 1996 and Admitted to SFU
BC Direct-Entry Secondary School Students versus College Transfer Students

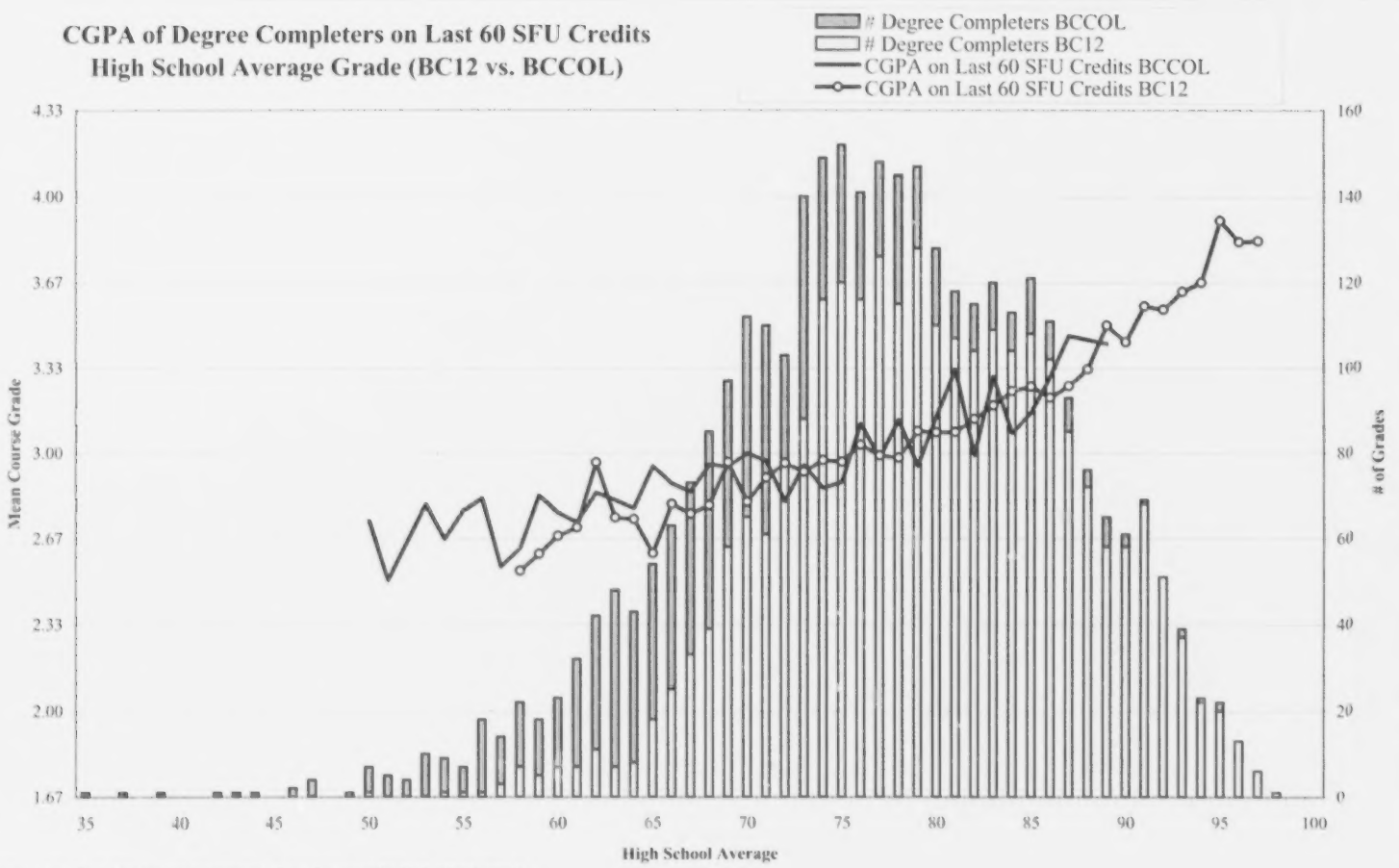
			Average High School Grade													
			<= 50		51 to 60		61 to 70		71 to 80		81 to 90		91 to 100		TOTAL	
Crs	Num	Data	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL
BUS	207	Avg Grade			2.13	2.35	2.64	2.35	2.65	2.23	3.01	2.99	3.33		2.15	2.01
		N			5	17	30	75	173	58	181	26	22		411	176
	237	Avg Grade	3.00	2.47	2.31	2.25	2.37	2.48	2.58	2.68	2.97	2.74	3.43		1.96	1.99
		N	1	5	18	55	148	146	653	116	482	32	50		1352	354
	251	Avg Grade	1.00	2.55	2.52	2.49	2.38	2.55	2.65	2.67	3.00	3.08	3.61		1.99	2.03
		N	1	3	9	30	116	89	446	79	320	16	42		934	217
	254	Avg Grade	2.00	2.20	2.43	2.29	2.42	2.44	2.63	2.58	3.00	2.75	3.58		2.06	1.95
		N	1	5	7	42	83	154	456	128	405	36	48		1000	365
	272	Avg Grade	3.00	2.13	2.50	2.51	2.58	2.57	2.75	2.80	2.96	2.72	3.47		1.95	2.00
		N	1	5	10	37	97	99	491	94	336	20	37		972	255
	303	Avg Grade		2.67	3.00	2.82	2.98	2.92	3.01	2.91	3.16	3.02	3.44		2.30	2.25
		N		2	1	11	14	43	86	40	102	14	9		212	110
	312	Avg Grade	2.33	3.00	4.00	2.52	2.83	2.77	2.78	2.92	3.30	3.08	3.78		2.39	2.04
		N	1	2	1	18	25	65	166	81	193	22	30		416	188
	316	Avg Grade	4.00			3.17		2.87	3.03	3.13	3.27		3.00		2.68	2.19
		N	1			2		10	10	10	20		2		33	22
	336	Avg Grade		2.00	3.00	2.56	2.63	2.60	2.81	2.93	3.21	3.17	3.65		2.27	2.11
		N		1	2	23	27	73	185	69	201	27	24		439	193
	343	Avg Grade		2.00	2.33	2.63	2.92	2.78	3.02	2.91	3.13	2.93	3.57		2.28	2.13
		N		1	3	21	32	66	188	67	212	24	30		465	179
	360	Avg Grade		2.00		2.69	2.71	2.86	2.91	2.81	2.86	2.90	2.94		2.12	2.29
		N		1		15	16	49	86	36	101	17	12		215	118
	374	Avg Grade			3.00	2.80	3.17	3.05	2.94	3.15	3.36		3.55		2.55	2.34
		N			1	5	4	13	22	11	31		3		61	29
	381	Avg Grade				2.83	2.88	2.67	3.09	2.82	3.00	2.91	3.57		2.11	2.22
		N				6	11	29	77	22	65	11	11		164	68
	393	Avg Grade		3.00			2.67	2.86	3.15	3.28	2.83	3.00	3.78		2.26	2.53
		N		1			3	14	16	6	12	2	6		37	23
	478	Avg Grade	4.00	3.17		3.19	2.98	3.10	3.12	3.04	3.18	2.96	3.38		2.25	2.25
		N	1	2		16	19	60	147	68	157	19	15		339	165
EDUC	220	Avg Grade		2.07	2.29	2.45	2.56	2.60	2.58	2.87	2.95	3.30	3.88	3.33	1.90	2.12
		N		5	7	25	67	90	191	58	97	9	11	1	373	188
	326	Avg Grade			3.11	3.72	3.19	3.54	3.36	3.59	3.57	3.58	4.00	4.00	2.10	2.91
		N			3	12	24	43	65	23	25	4	1	1	118	83
	472	Avg Grade		3.00	4.00	3.00	3.78	3.69	3.52	3.37	3.63	3.89			2.79	2.79
		N		1	1	1	3	12	9	10	10	3			23	27
BICH	221	Avg Grade					2.69	2.73	3.12	2.84	3.24	3.33	3.92		2.39	1.83
		N					14	15	85	27	93	4	20		212	46
BUEC	232	Avg Grade	2.00	2.48	2.74	2.40	2.51	2.57	2.72	2.86	3.16	3.13	3.52		1.98	2.10
		N	1	9	13	60	113	138	477	108	299	31	29		932	346
	333	Avg Grade	2.33	2.63	2.31	2.58	2.66	2.70	2.86	2.82	3.21	3.18	3.41		2.10	2.16
		N	1	10	13	72	108	187	433	157	327	44	38		920	470

			<= 50		51 to 60		61 to 70		71 to 80		81 to 90		91 to 100		TOTAL	
Crs	Num	Data	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL
CHEM	150	Avg Grade			2.33	2.33	2.59	2.37	2.66	2.63	2.99	3.17	3.61		2.21	2.09
		N			1	4	18	20	103	18	106	10	23		251	52
	155	Avg Grade			3.00	2.75	2.81	2.76	2.83	2.72	2.98	2.44	3.61		2.29	2.13
		N			1	4	14	18	83	18	96	12	23		217	52
CMNS	110	Avg Grade			2.33	2.78	2.46	3.03	3.03	3.11	3.07	3.17	3.00		2.13	2.88
		N			1	3	8	11	10	3	5	4	1		25	21
CRIM	101	Avg Grade			2.33	2.83	2.53	2.66	2.65	2.89	2.86	3.00	3.38		1.92	2.18
		N			1	4	28	9	81	9	47	1	7		164	23
ECON	105	Avg Grade				3.17	2.67	2.44	2.45	2.64	2.47	2.00	4.11		2.04	1.79
		N				2	6	6	26	12	20	1	6		58	21
	210	Avg Grade	4.00	2.89	2.33	2.19	2.57	2.38	2.82	2.88	3.27	3.28	4.00		2.08	2.01
		N	1	3	6	35	47	63	162	44	111	7	8		335	152
	290	Avg Grade		2.00		2.17	2.78	2.75	2.09	2.53	2.59	4.00	4.00		2.18	2.06
		N		1		6	6	8	11	10	9	1	2		28	26
	291	Avg Grade	3.00			2.75	2.50	2.22	2.63	2.44	3.48	4.00	4.00		2.00	2.08
		N	1			4	2	6	17	9	7	2	1		28	21
	301	Avg Grade	3.33	3.00	2.44	2.54	2.45	2.67	2.64	2.98	3.26	3.33	3.76		1.90	2.11
		N	1	2	6	40	47	67	152	57	67	3	7		280	169
	305	Avg Grade	4.00	2.67	2.53	2.77	2.74	2.74	2.94	2.97	3.04	2.78	3.83		1.92	2.26
		N	1	3	5	32	34	56	117	39	53	3	6		216	133
	325	Avg Grade				3.44	3.78	3.67	3.67	3.17	4.00	4.00			2.47	2.83
		N				6	6	8	13	8	5	1			24	23
	342	Avg Grade		3.00	3.50	3.17	2.92	2.83	3.03	2.96	3.25	3.33			1.88	2.32
		N		1	2	8	13	24	49	18	17	1			81	52
	345	Avg Grade	4.00		2.83	2.65	2.51	2.68	2.81	2.79	3.14	3.33	3.58		2.00	2.18
		N	1		4	17	26	49	93	34	58	4	4		186	104
	382	Avg Grade			2.00	2.59	2.43	2.54	3.02	2.58	3.08				1.60	2.21
		N			3	9	10	11	31	8	4				48	28
	390	Avg Grade		2.33	2.50	2.79	3.07	3.02	3.05	3.41	3.27	4.00	4.00		1.89	2.31
		N		1	2	13	15	17	35	18	5	1	1		58	50
ENGL	204	Avg Grade				2.50	2.75	2.83	3.29	3.17	3.37		4.00		2.51	2.08
		N				2	8	12	24	12	29		4		65	26
	312	Avg Grade		1.50			2.79	2.92	3.27	3.54	3.53	3.67	4.00		2.40	2.29
		N		2			8	9	15	8	10	2	2		35	21
GEOG	327	Avg Grade		3.00		3.00	3.00	3.18	3.45	3.27	3.33	4.17			1.67	2.93
		N		1		3	1	15	17	5	4	2			22	26
HIST	101	Avg Grade		3.00		2.78	3.04	3.13	3.32	3.33	3.31	3.50	4.33		2.09	2.51
		N		1		6	9	5	31	7	16	2	1		57	21
KIN	110	Avg Grade		2.67	2.55	2.85	2.83	2.93	3.10	3.28	3.42	3.70	3.67	3.00	2.31	2.32
		N		3	3	18	61	56	199	49	177	11	22	1	462	138
	140	Avg Grade			3.00		2.89	2.69	3.01	3.33	3.40	3.00	4.11		2.15	2.22
		N			1		6	12	35	8	21	1	3		66	21
	143	Avg Grade		3.33			2.80	2.37	3.01	3.04	2.98	3.50	3.83		2.05	2.25
		N		1			5	8	22	8	14	4	2		43	21
LING	100	Avg Grade		3.22	2.97	2.97	2.97	3.16	3.14	3.32	3.36	3.24	3.83		2.14	2.63
		N		3	11	53	94	114	300	56	188	11	14		607	237
	110	Avg Grade		2.78	2.78	2.91	2.81	3.13	3.06	3.17	3.29	3.30	3.80	4.00	2.11	2.52
		N		6	12	68	108	131	416	86	268	21	34	1	838	313

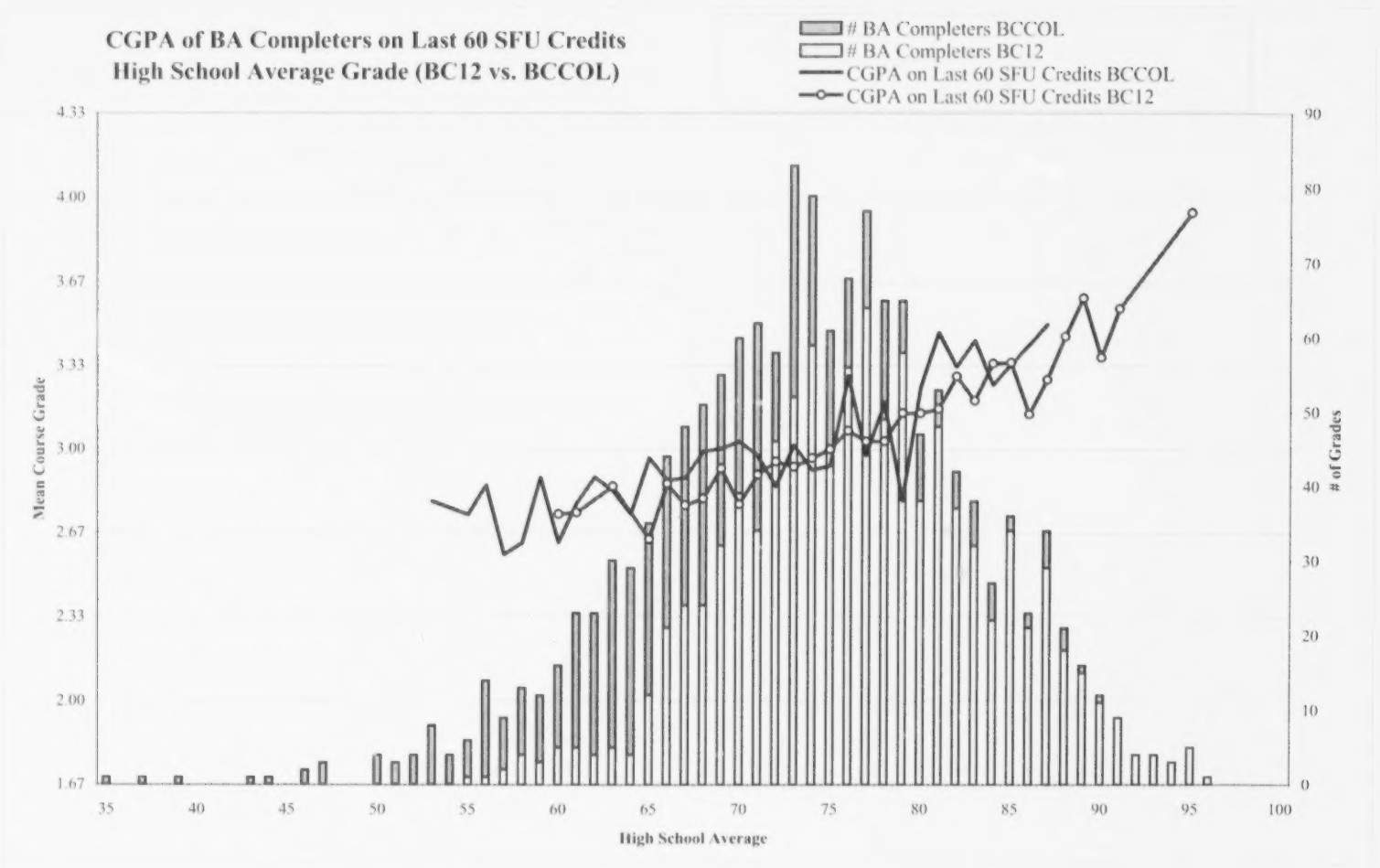
			<= 50		51 to 60		61 to 70		71 to 80		81 to 90		91 to 100		TOTAL	
Crs	Num	Data	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL	BC12	BCCOL
LING	220	Avg Grade		2.67	1.75	2.49	2.78	3.04	2.91	2.75	3.05	3.86	3.72	4.00	2.02	2.56
		N		3	4	15	21	22	64	15	36	7	6	1	131	63
MACM	101	Avg Grade				3.00	2.50	2.72	2.40	2.53	2.96	2.87	3.50	4.00	2.08	2.33
		N				1	2	6	24	10	16	5	6	3	48	25
PHIL	1	Avg Grade		3.33	1.67	2.36	1.94	2.73	2.84	2.83	3.19	4.00	3.73	4.00	1.96	2.46
		N		3	2	13	11	21	55	12	34	4	5	1	107	54
POL	100	Avg Grade			2.50	2.40	2.62	3.05	2.62	3.47	2.72	3.00			1.88	2.63
		N			2	5	7	12	16	5	6	2			31	24
PSYC	201	Avg Grade		2.00	1.67	2.24	2.73	2.56	2.87	2.73	3.09	3.45	3.18	4.00	2.05	2.01
		N		3	5	28	61	87	157	82	107	17	9	1	339	218
	221	Avg Grade		2.00	3.00	2.24	2.77	2.53	2.80	2.62	3.31	3.50	3.87	4.00	2.14	2.18
		N		1	1	22	28	63	95	37	60	12	10	1	194	136
	241	Avg Grade		2.00		2.19	2.53	2.64	2.84	2.92	3.23	3.17	3.27	4.00	1.98	2.15
		N		1		7	15	22	51	17	26	4	5	1	97	52
	250	Avg Grade		2.47	2.33	2.65	2.78	2.77	2.98	2.84	3.31	3.20	3.14		2.08	2.30
		N		5	1	20	33	61	89	34	50	5	7		180	125
	260	Avg Grade		3.00	2.33	2.13	1.71	2.74	3.14	2.75	3.64	2.89	4.00		2.09	2.50
		N		1	1	5	8	14	22	4	14	3	1		46	27
	270	Avg Grade		0.00		2.39	2.71	2.45	2.91	3.18	2.97	3.47	3.83	4.33	1.96	2.32
		N		1		6	8	23	39	9	21	5	4	1	72	45
	302	Avg Grade				2.61	2.96	2.62	2.97	3.08	3.53	3.00			2.59	2.52
		N				12	9	14	11	4	12	1			32	31
	306	Avg Grade				1.75	2.66	2.53	3.17	2.73	2.87	3.67	4.00		1.82	1.89
		N				4	3	5	16	10	5	2	1		25	21
	307	Avg Grade				2.11	2.55	3.53	2.86	2.83	3.17	3.50			1.98	2.74
		N				3	3	10	12	6	6	2			21	21
	345	Avg Grade		2.00	3.00	2.60	2.78	2.35	2.95	3.00	3.29	4.00	4.00		2.10	2.07
		N		1	1	10	15	18	43	16	26	2	1		86	47
	355	Avg Grade		2.00	4.00	2.78	2.83	3.04	2.96	3.15	3.09	3.00			1.90	2.30
		N		1	1	3	4	9	19	9	7	1			31	23
	356	Avg Grade				2.00	3.22	2.95	2.93	3.00	3.00	3.58	2.33		1.92	2.60
		N				1	3	14	15	7	6	4	1		25	26
	357	Avg Grade				2.60	2.58	3.54	2.95	3.24	2.79	4.00			1.86	2.45
		N				5	8	8	19	11	8	2			35	26
	369	Avg Grade				2.76	3.09	2.71	2.95	3.00	3.30	3.50	4.33		1.90	2.34
		N				11	14	37	56	21	20	6	1		91	75
	385	Avg Grade		2.33	3.00	2.88	2.84	2.89	3.22	2.87	3.32	3.33		4.00	2.11	2.35
		N		1	1	14	15	30	63	25	45	6		1	124	77
STAT	301	Avg Grade			2.17	2.52	2.79	2.84	2.92	2.99	3.30	3.14	3.73		2.39	2.26
		N			2	7	22	32	162	27	171	12	45		402	78
Total Avg Grade			3.00	2.52	2.52	2.59	2.65	2.73	2.83	2.87	3.13	3.12	3.60	3.90	2.08	2.17
Total N			14	102	174	997	1,824	2,713	7,532	2,173	5,682	568	713	14	15939	6567

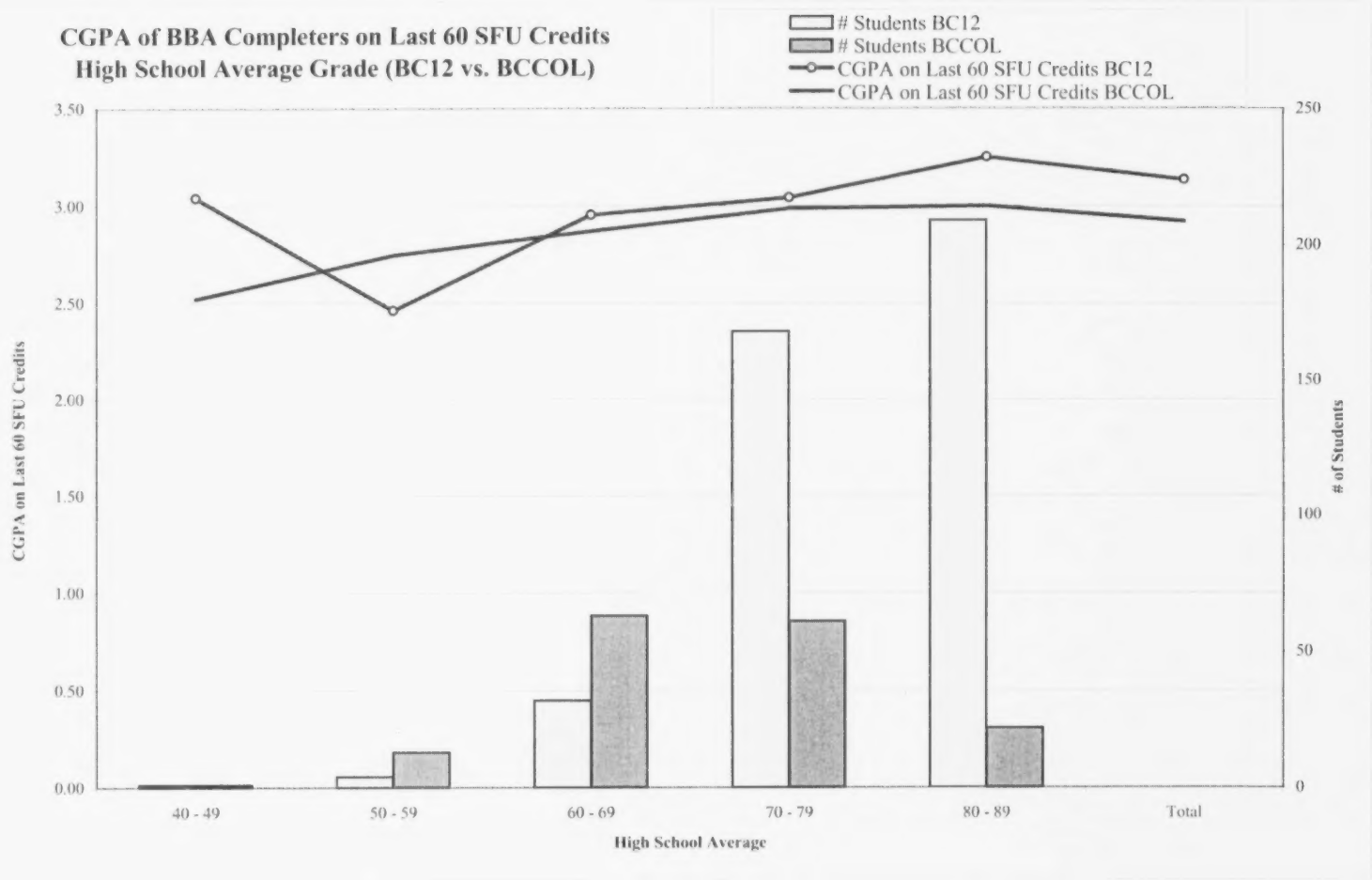
Notes:

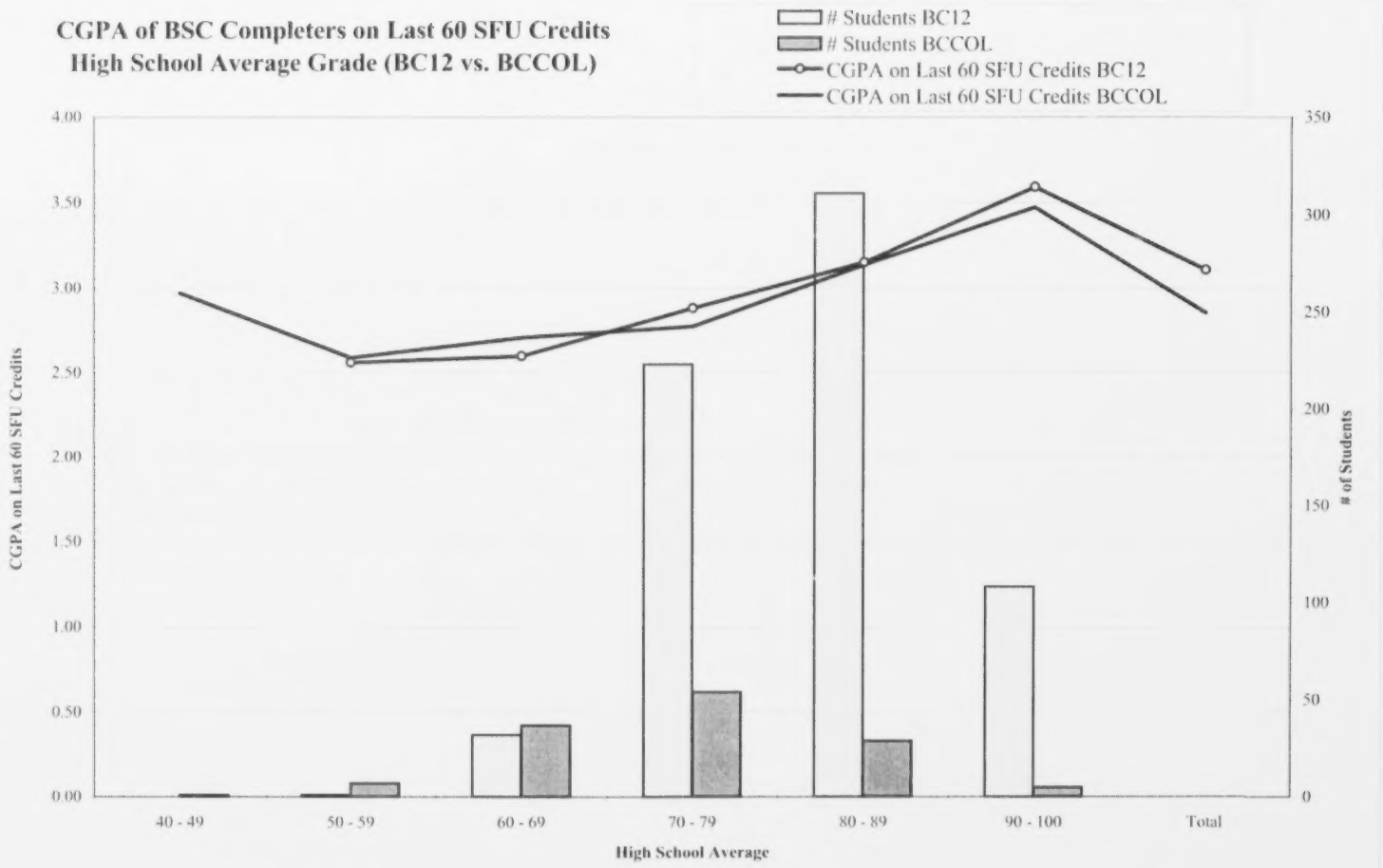
1. Includes courses where the number of students from college and high school combined completed the course is 20 or more.
2. Average high school grade per student is the average of provincial exam scores in English 12 plus three other examinable courses with the highest grades.

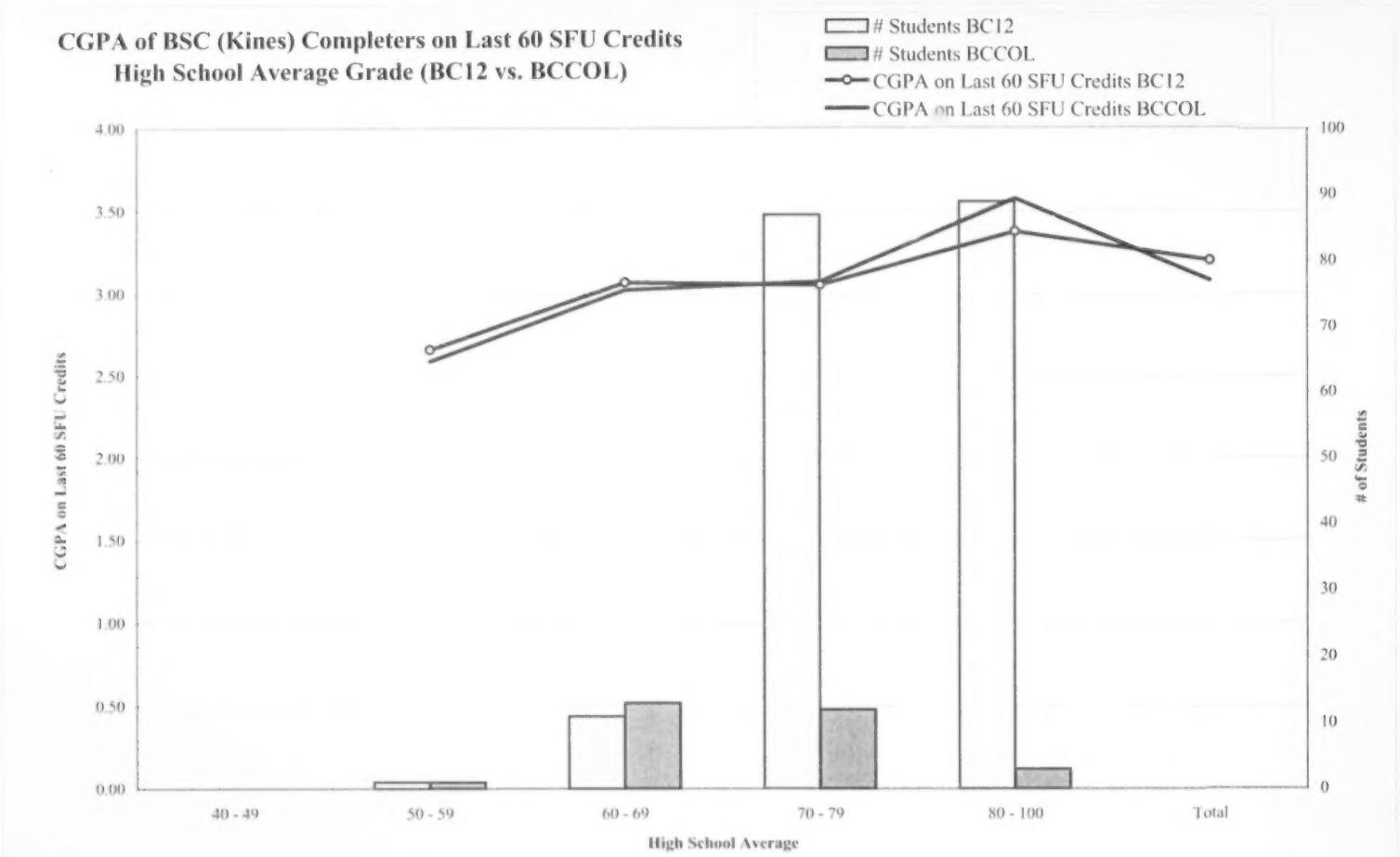


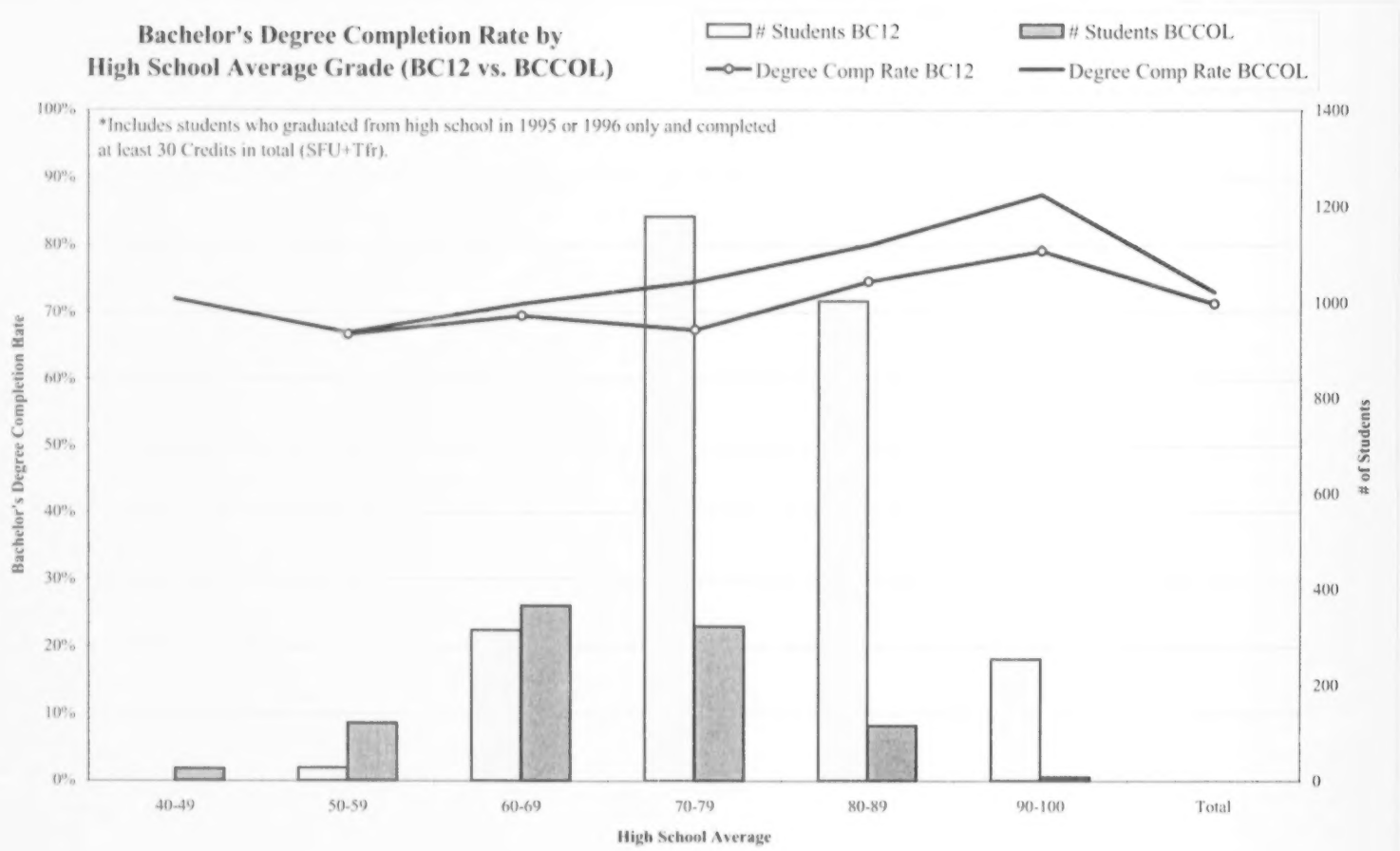
Note. Line chart data points suppressed if n < 5 at specific high school grade.


CGPA of BA Completers on Last 60 SFU Credits
High School Average Grade (BC12 vs. BCCOL)
BA Completers BCCOL
BA Completers BC12
CGPA on Last 60 SFU Credits BCCOL
CGPA on Last 60 SFU Credits BC12
Mean Course Grade
# of Grades
High School Average
4.33
4.00
3.67
3.33
3.00
2.67
2.33
2.00
1.67
90
80
70
60
50
40
30
20
10
0
35
40
45
50
55
60
65
70
75
80
85
90
95
100

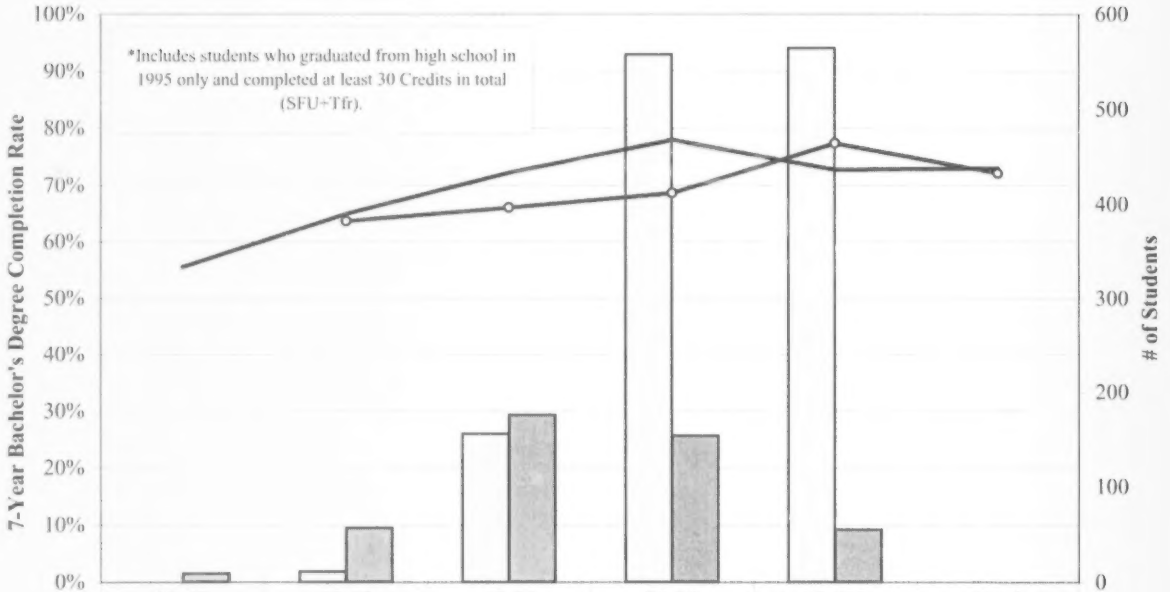

CGPA of BBA Completers on Last 60 SFU Credits
High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
CGPA on Last 60 SFU Credits BC12
CGPA on Last 60 SFU Credits BCCOL
CGPA on Last 60 SFU Credits
# of Students
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
250
200
150
100
50
0
40 - 49
50 - 59
60 - 69
70 - 79
80 - 89
Total
High School Average


CGPA of BSC Completers on Last 60 SFU Credits
High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
CGPA on Last 60 SFU Credits BC12
CGPA on Last 60 SFU Credits BCCOL
CGPA on Last 60 SFU Credits
# of Students
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
350
300
250
200
150
100
50
0
40 - 49
50 - 59
60 - 69
70 - 79
80 - 89
90 - 100
Total
High School Average


CGPA of BSC (Kines) Completers on Last 60 SFU Credits
High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
CGPA on Last 60 SFU Credits BC12
CGPA on Last 60 SFU Credits BCCOL
CGPA on Last 60 SFU Credits
# of Students
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
100
90
80
70
60
50
40
30
20
10
0
40 - 49
50 - 59
60 - 69
70 - 79
80 - 100
Total
High School Average

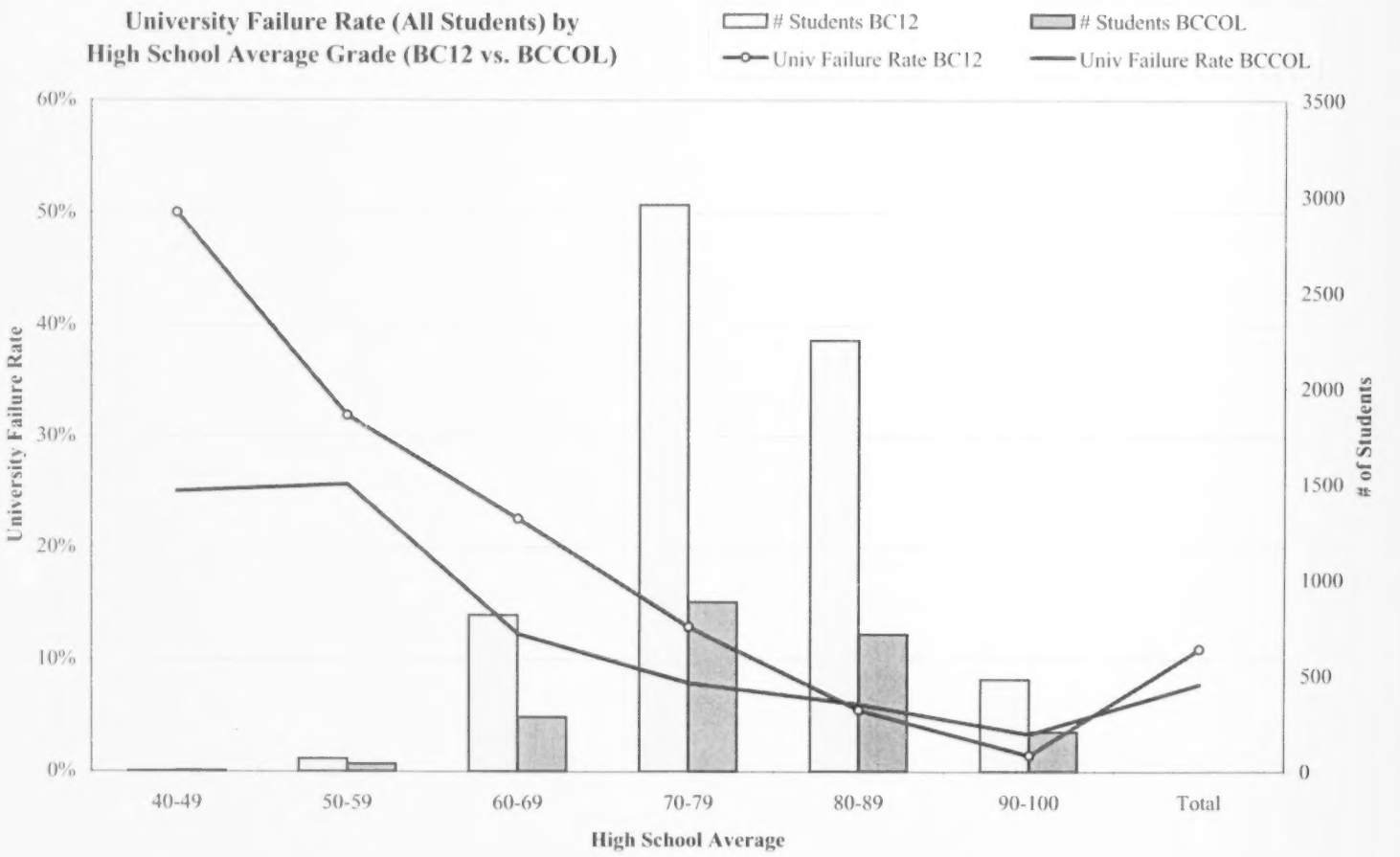

Bachelor's Degree Completion Rate by
High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
Degree Comp Rate BC12
Degree Comp Rate BCCOL
*Includes students who graduated from high school in 1995 or 1996 only and completed at least 30 Credits in total (SFU+Tfr).
Bachelor's Degree Completion Rate
# of Students
High School Average
40-49
50-59
60-69
70-79
80-89
90-100
Total

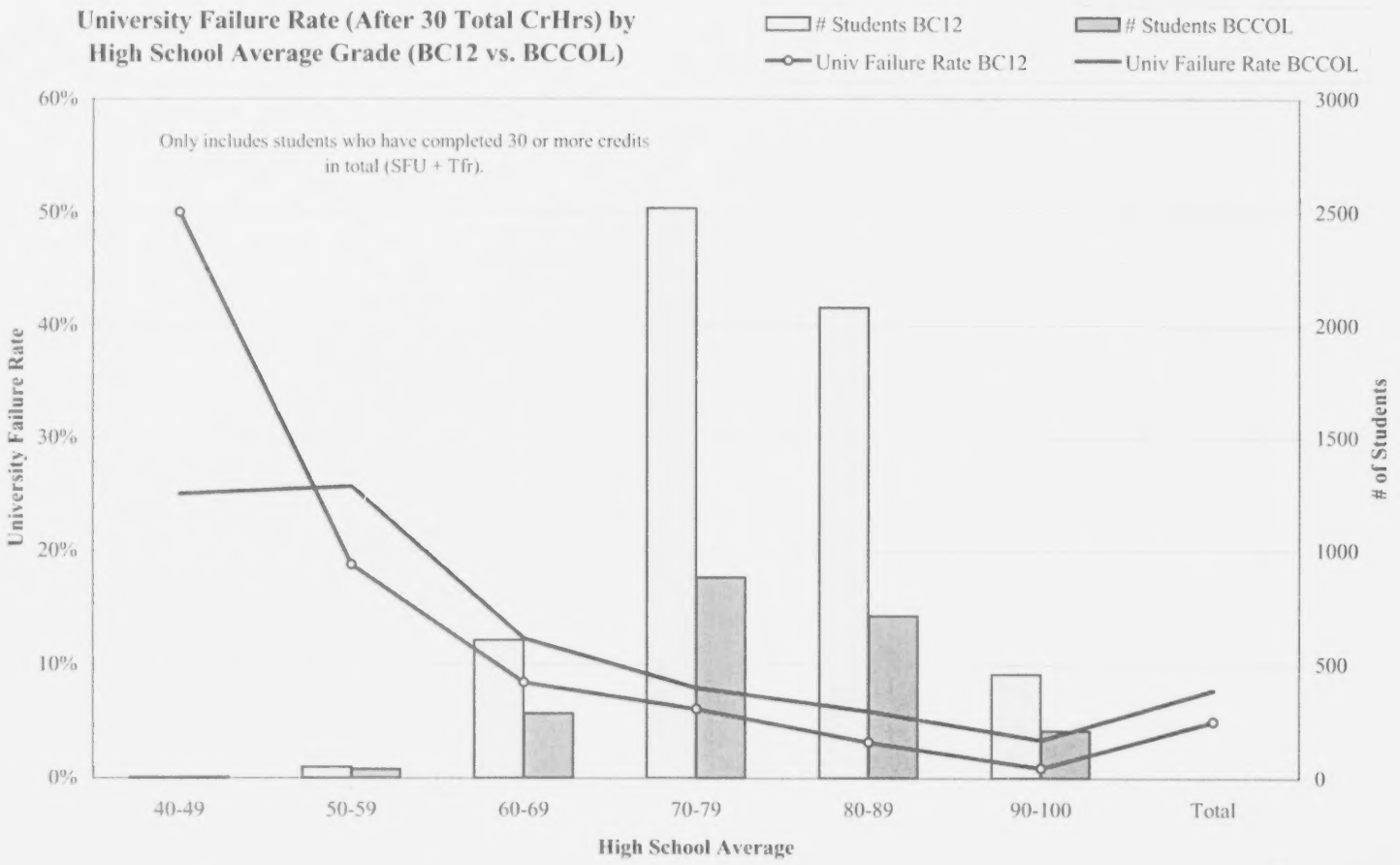
7-Year Degree Completion Rate by High School Average Grade (BC12 vs. BCCOL)

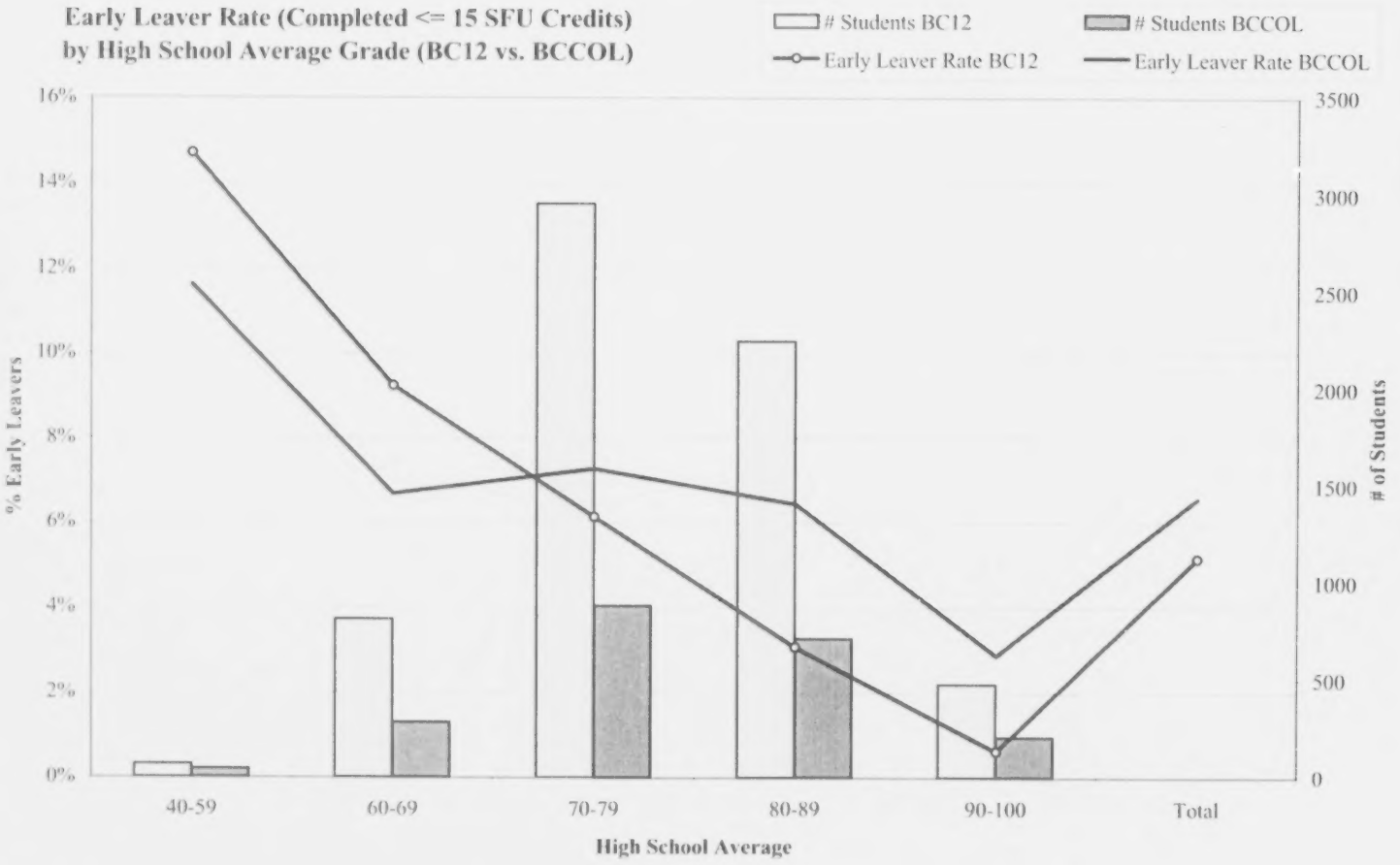


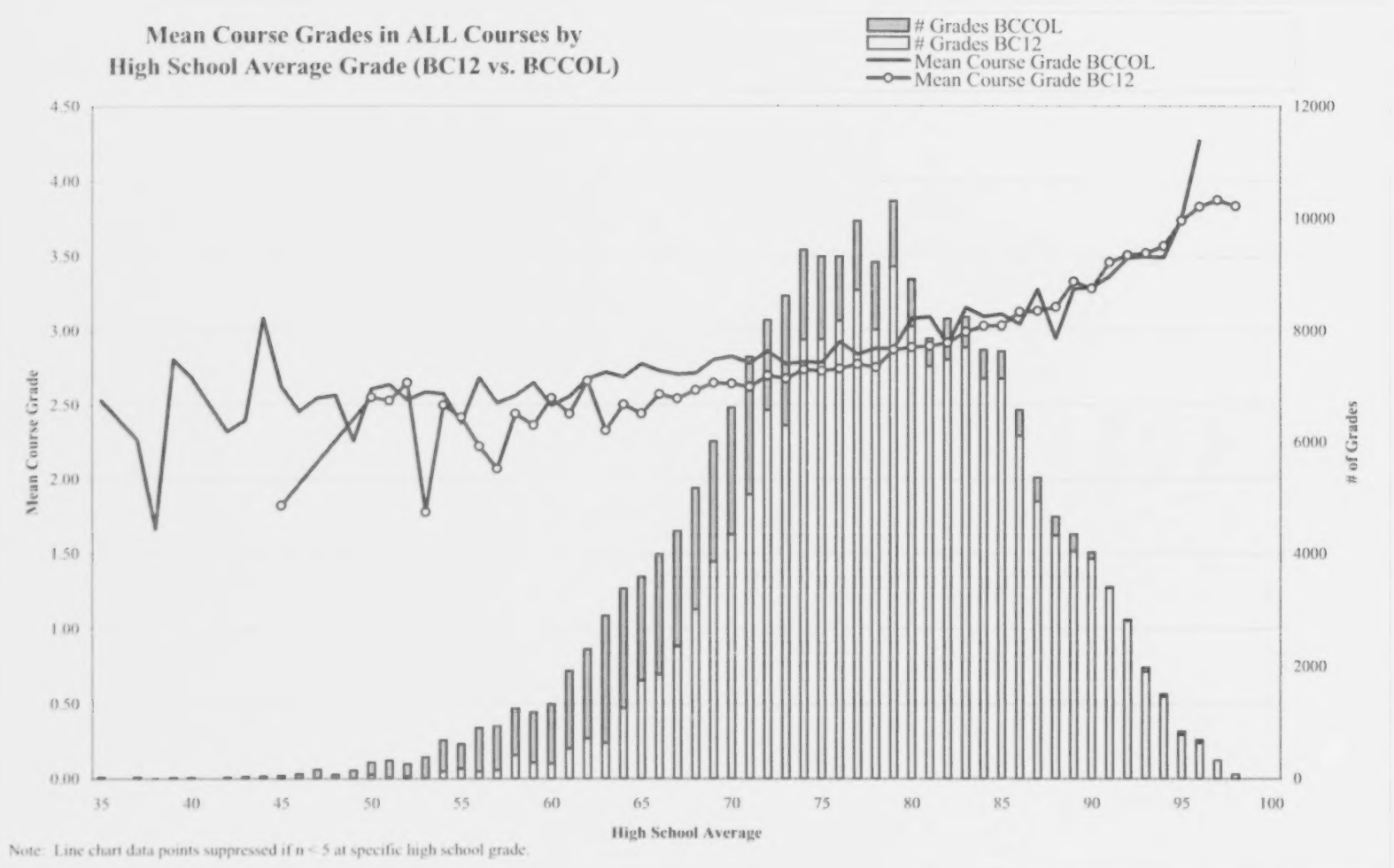
	30-49	50-59	60-69	70-79	80-100	Total
# Students BC12	0	11	156	557	564	1,288
# Students BCCOL	9	57	176	154	55	451
7-Yr Deg Comp Rate BC12		64%	66%	69%	77%	72%
7-Yr Deg Comp Rate BCCOL	56%	65%	72%	78%	73%	73%

High School Average

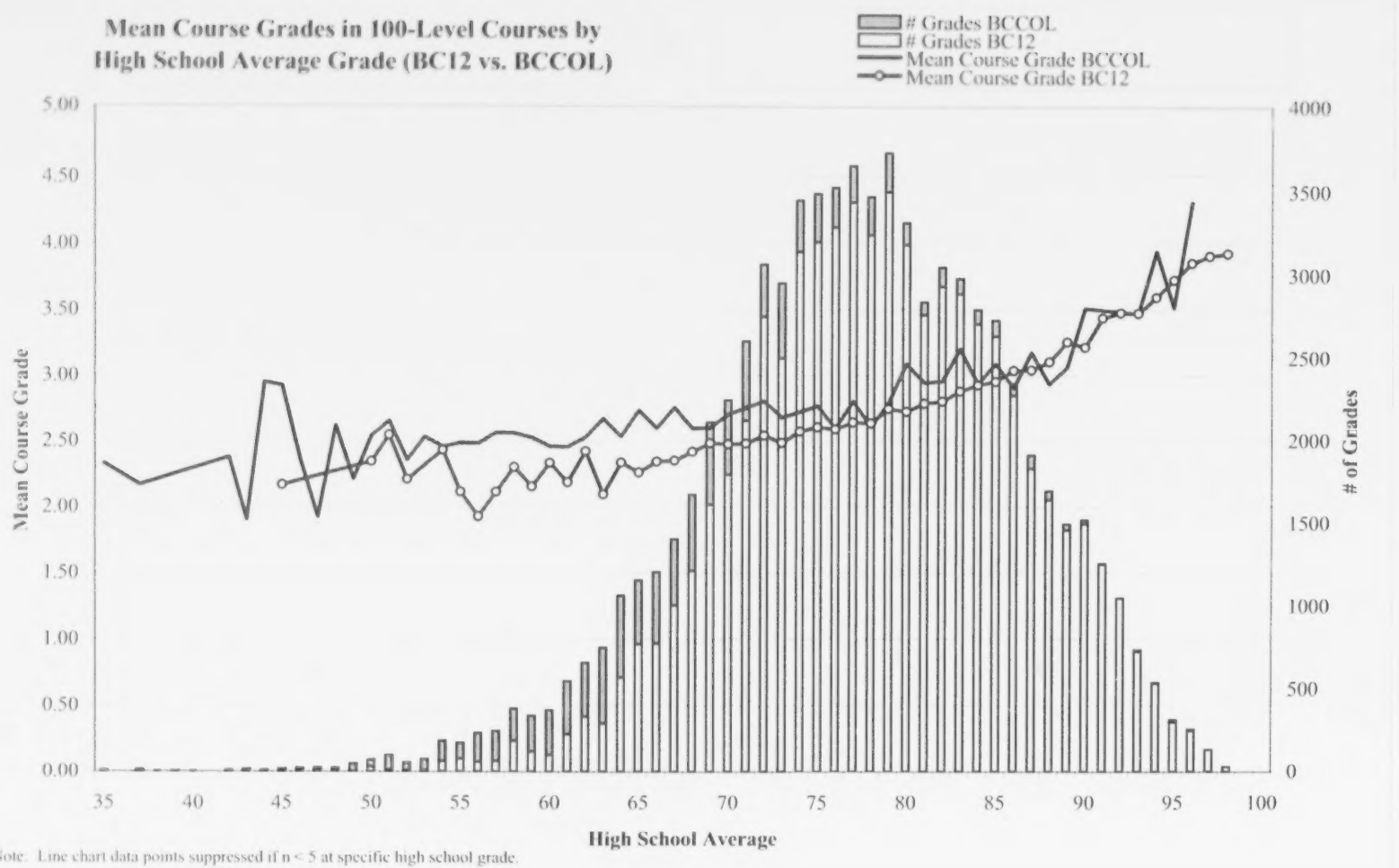

University Failure Rate (All Students) by
High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
Univ Failure Rate BC12
Univ Failure Rate BCCOL
60%
50%
40%
30%
20%
10%
0%
University Failure Rate
3500
3000
2500
2000
1500
1000
500
0
# of Students
40-49
50-59
60-69
70-79
80-89
90-100
Total
High School Average


University Failure Rate (After 30 Total CrHrs) by High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
Univ Failure Rate BC12
Univ Failure Rate BCCOL
Only includes students who have completed 30 or more credits in total (SFU + Tfr).
University Failure Rate
60%
50%
40%
30%
20%
10%
0%
# of Students
3000
2500
2000
1500
1000
500
0
40-49
50-59
60-69
70-79
80-89
90-100
Total
High School Average


Early Leaver Rate (Completed <= 15 SFU Credits)
by High School Average Grade (BC12 vs. BCCOL)
Students BC12
Students BCCOL
Early Leaver Rate BC12
Early Leaver Rate BCCOL
16%
14%
12%
10%
8%
6%
4%
2%
0%
% Early Leavers
3500
3000
2500
2000
1500
1000
500
0
# of Students
40-59
60-69
70-79
80-89
90-100
Total
High School Average



Note: Line chart data points suppressed if n < 5 at specific high school grade.



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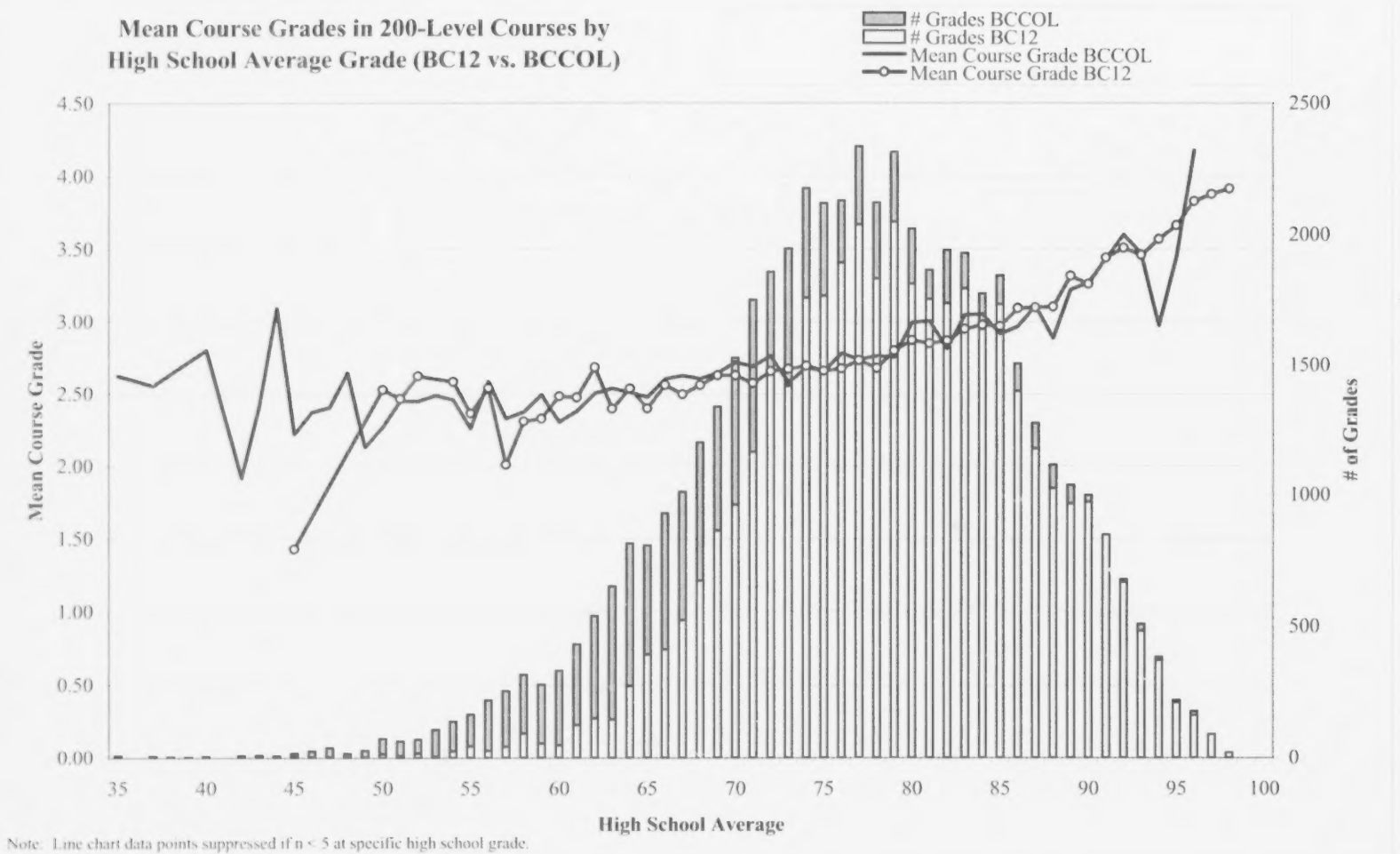

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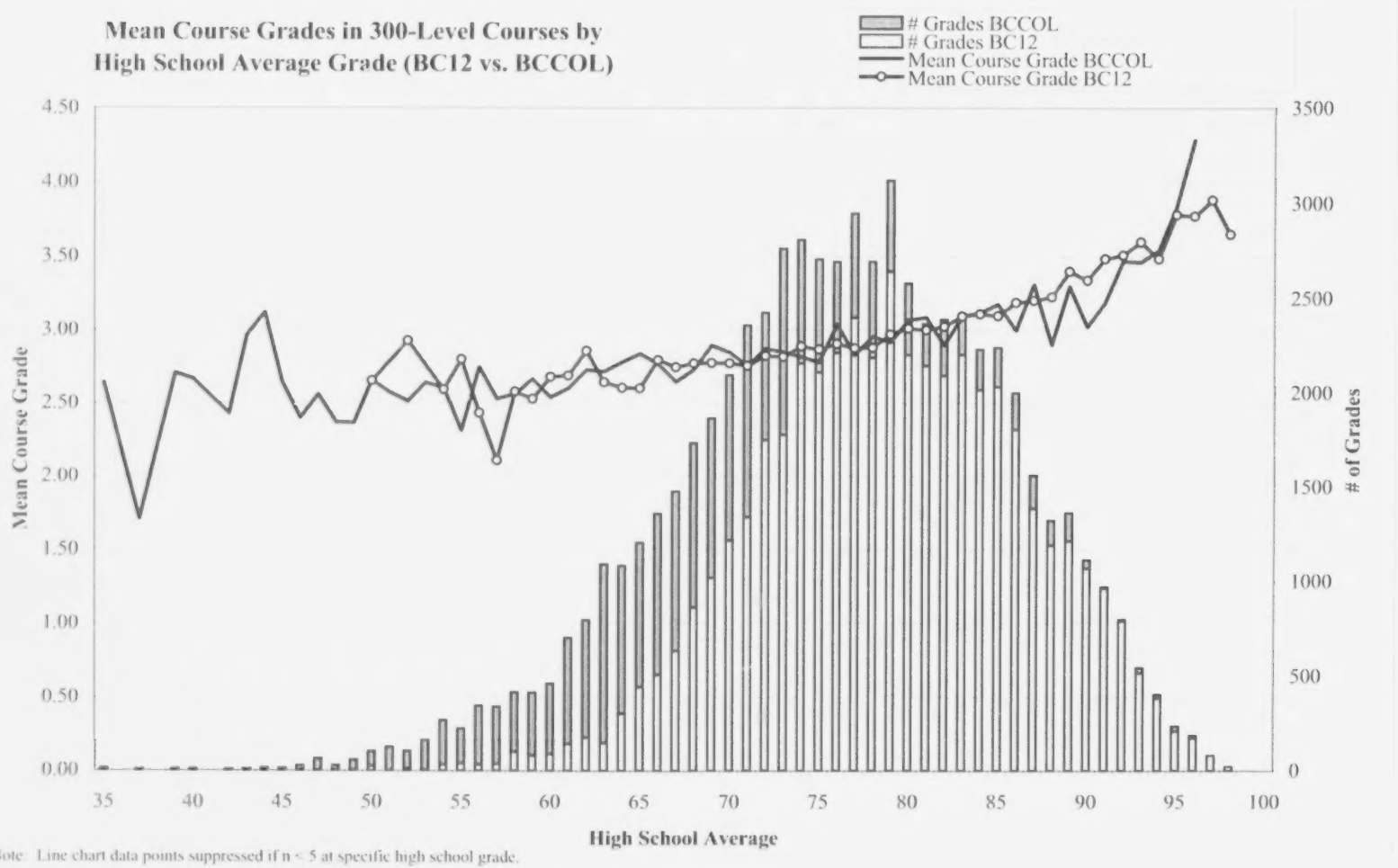

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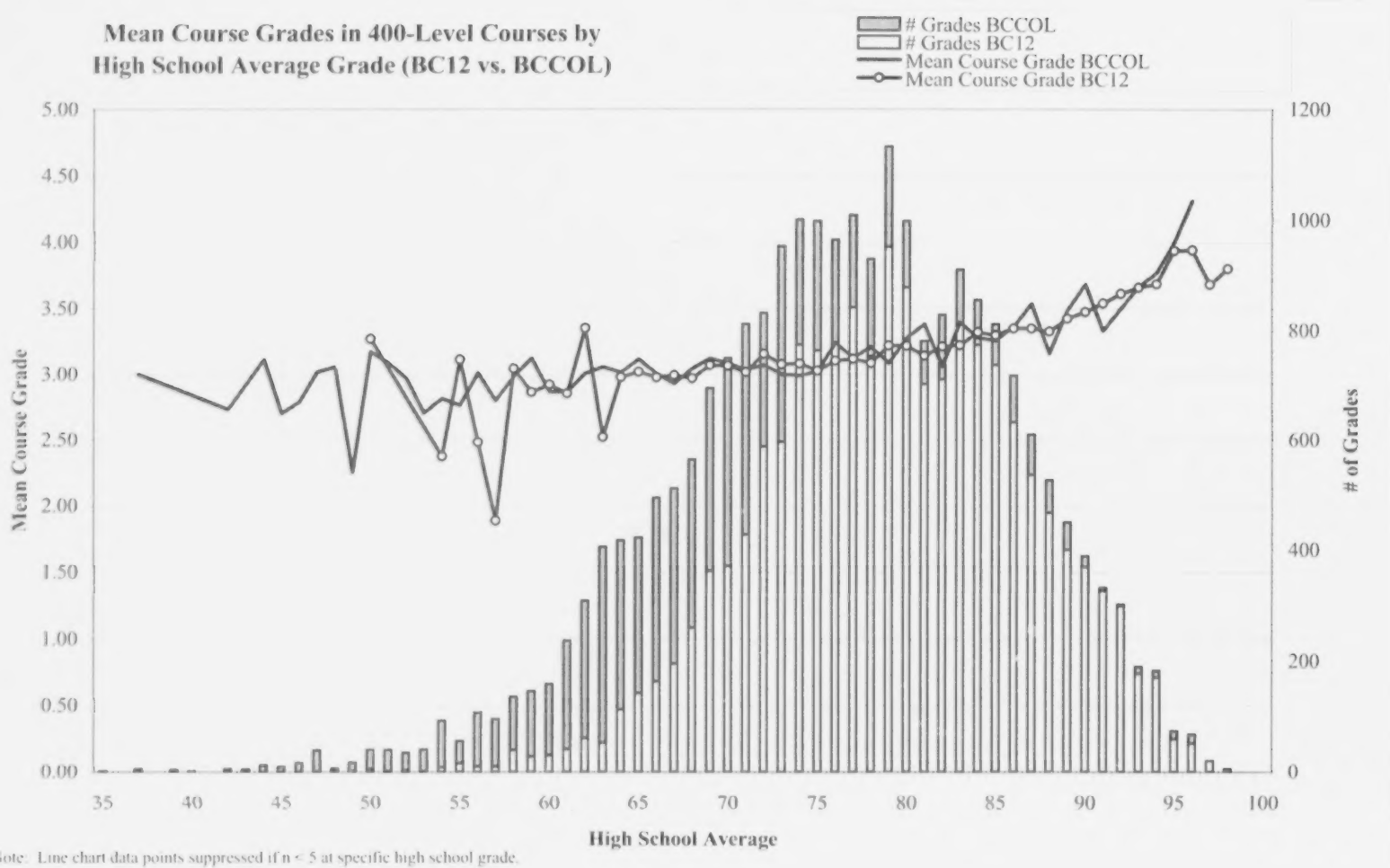

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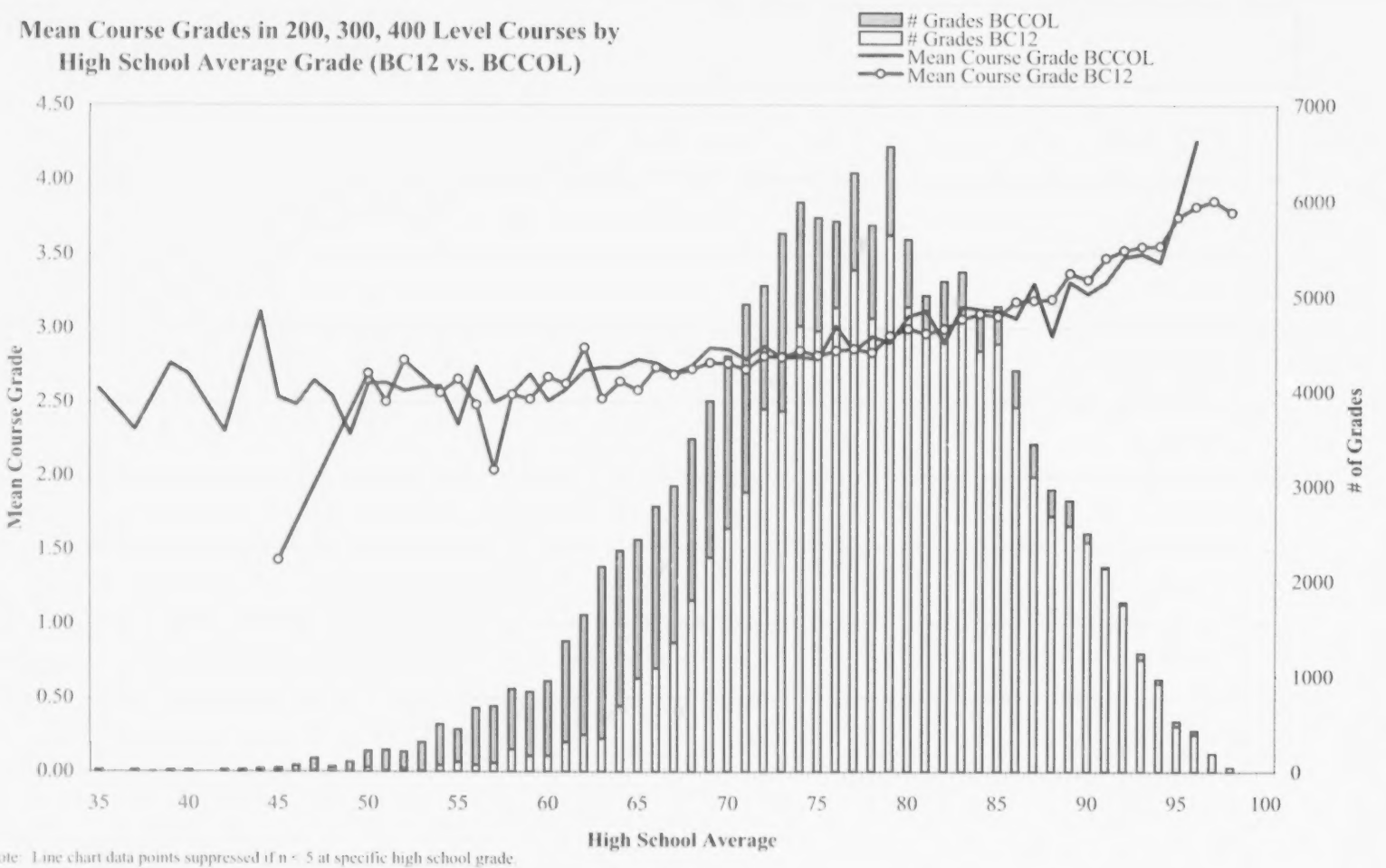

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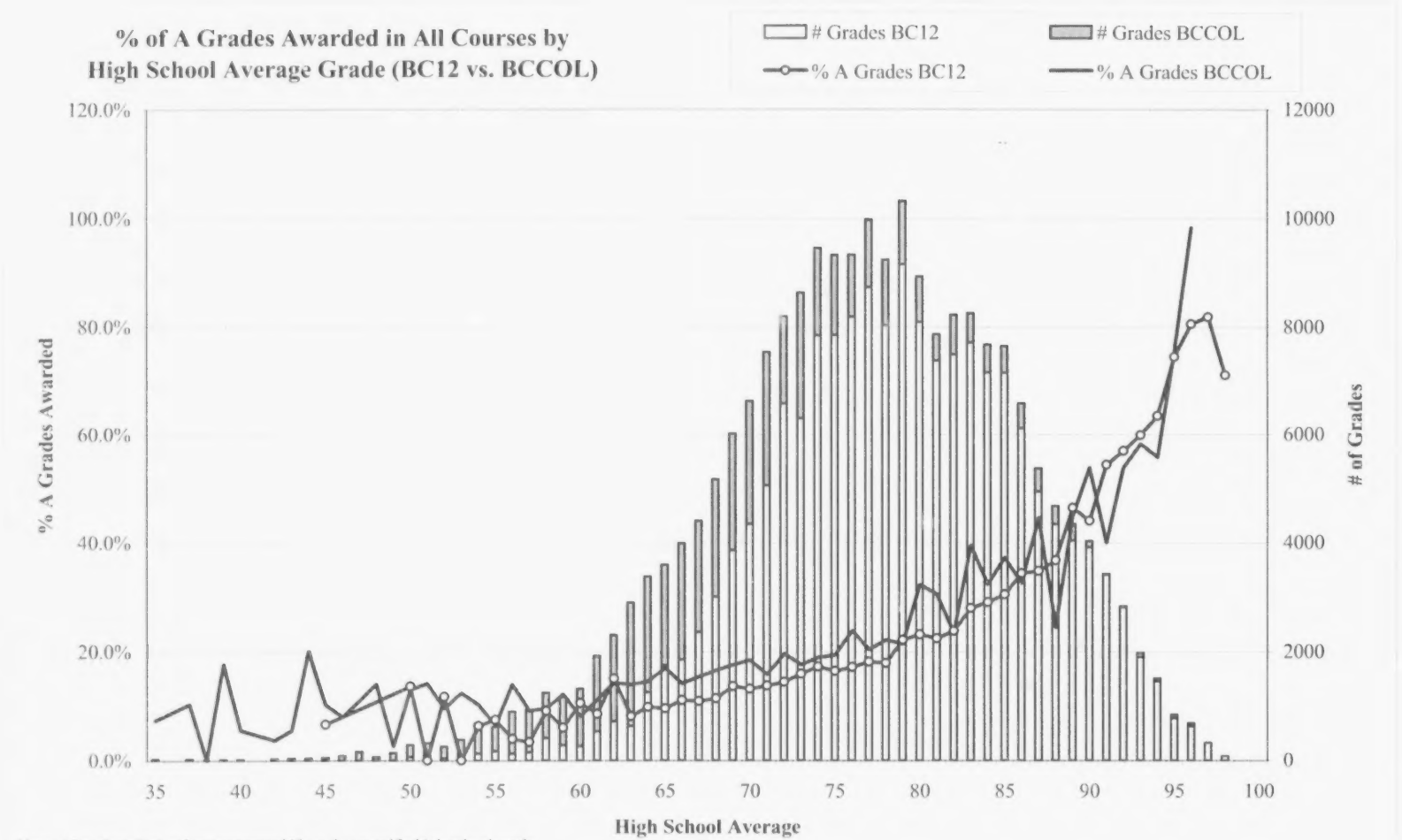

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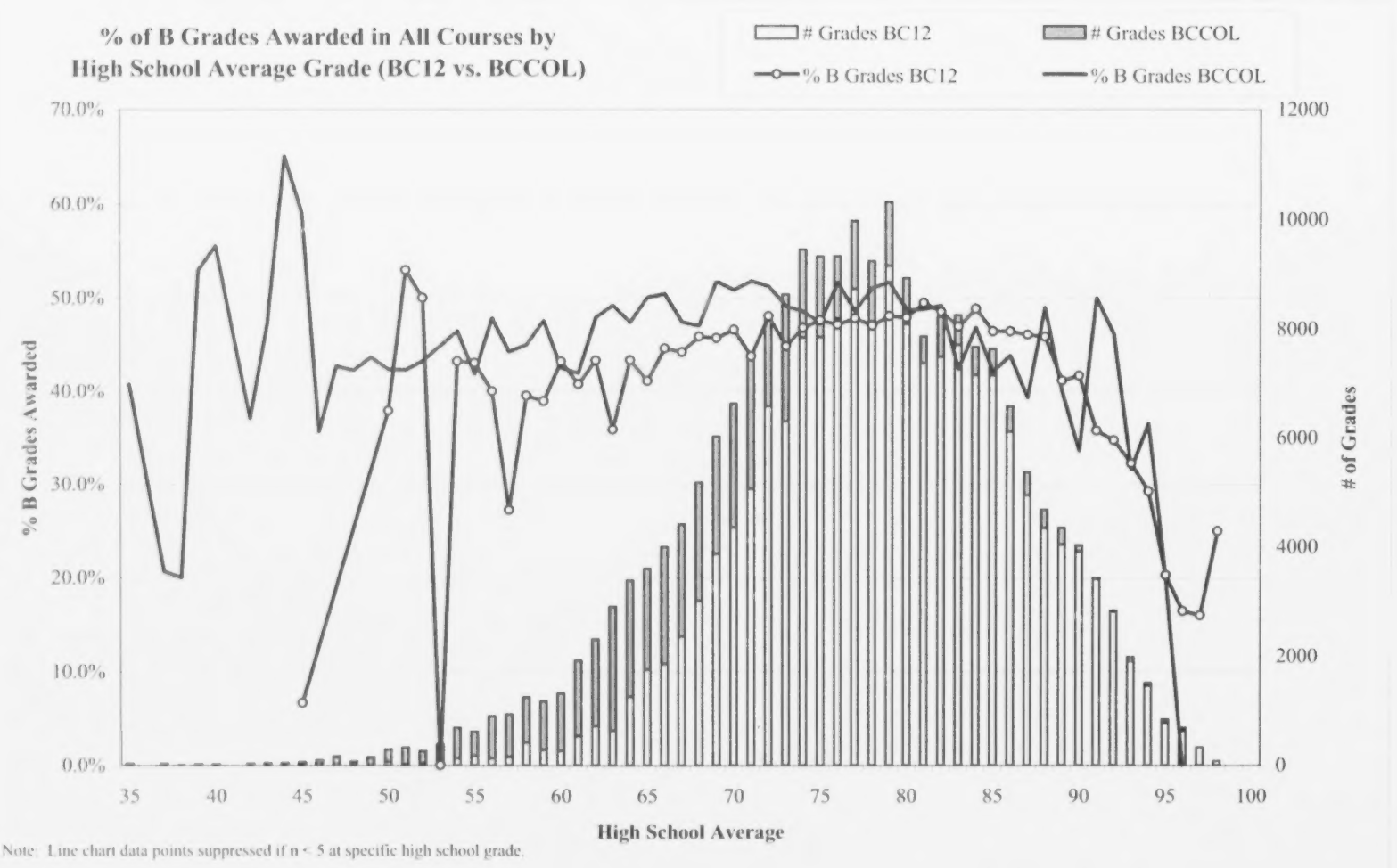

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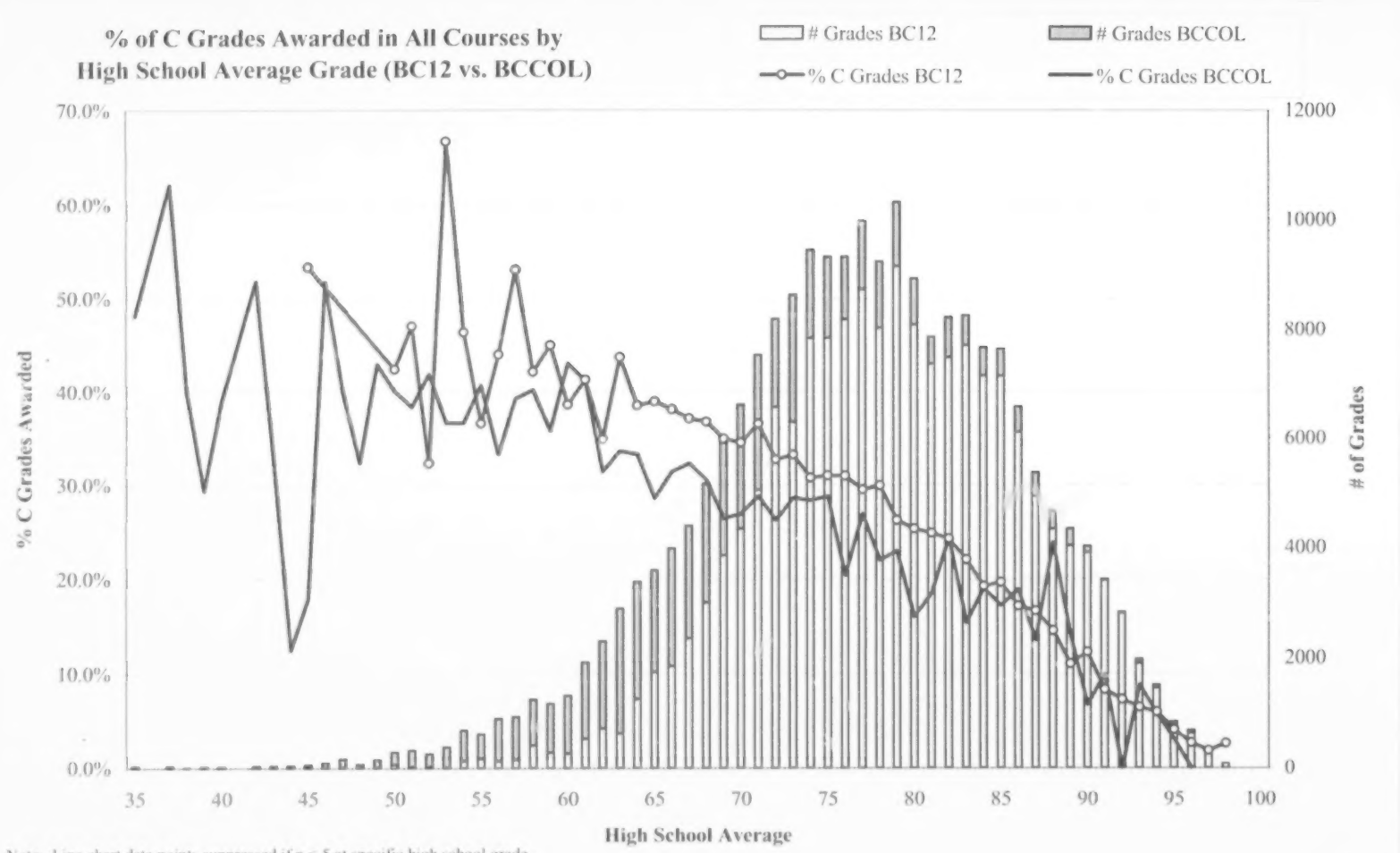

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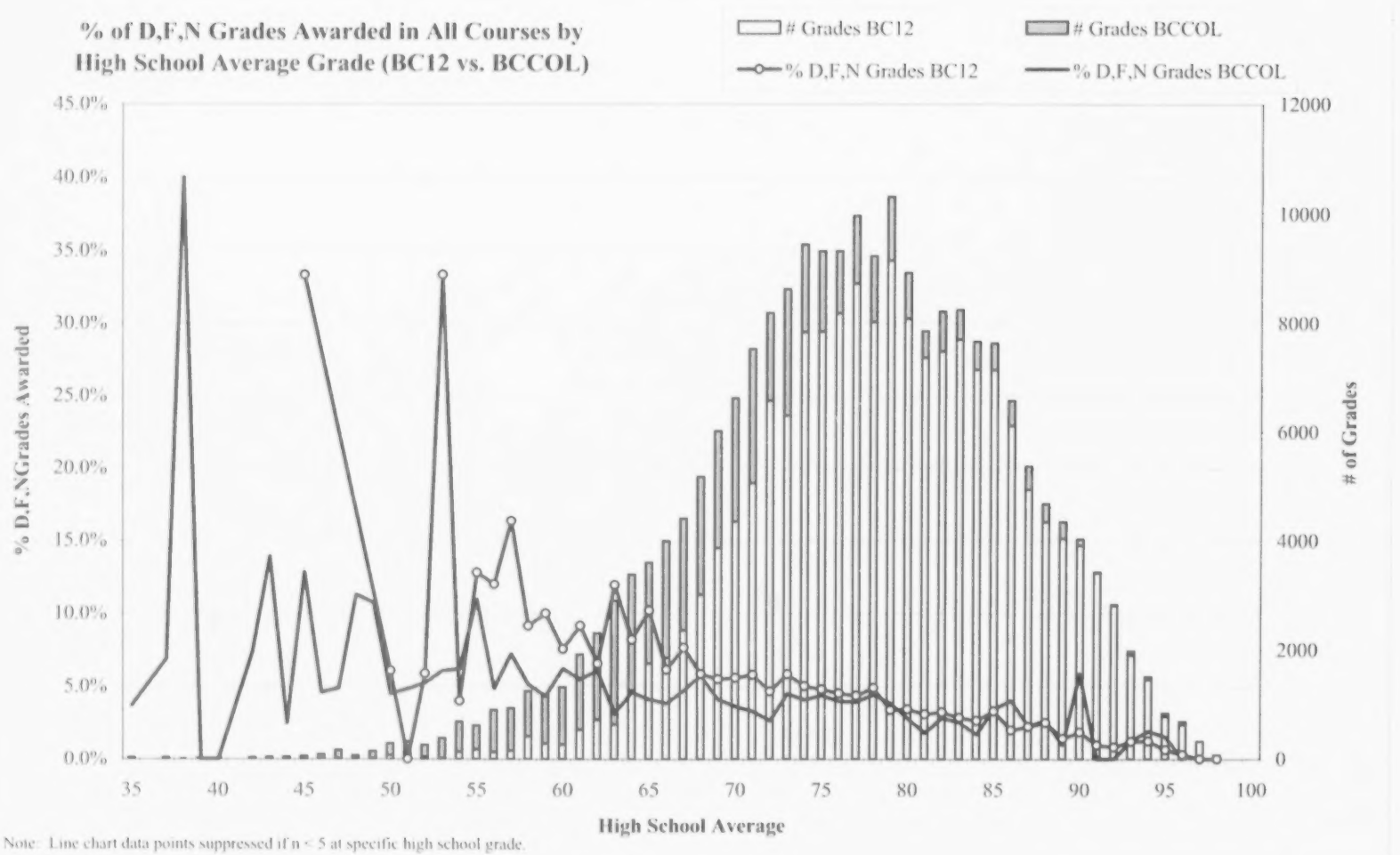

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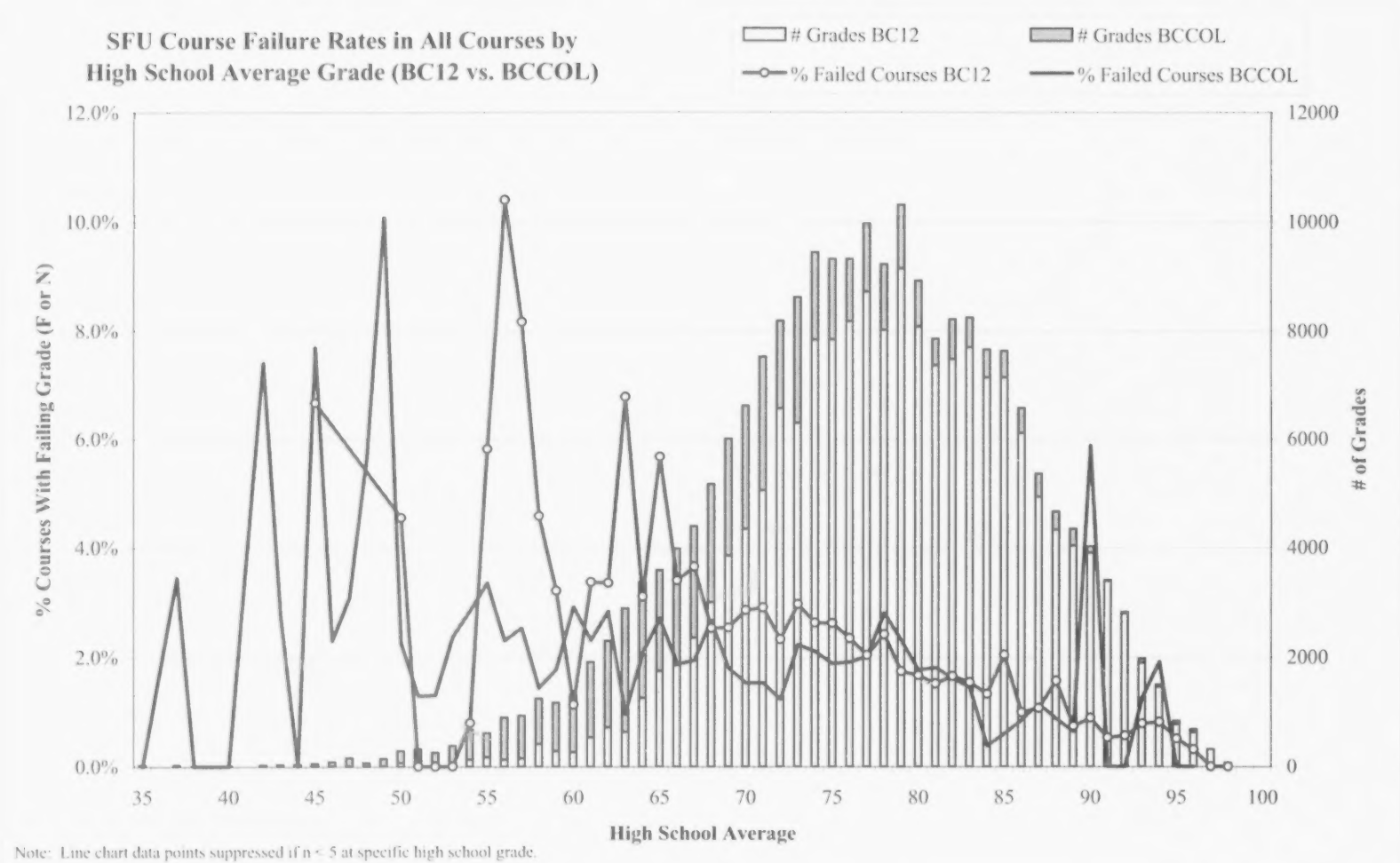

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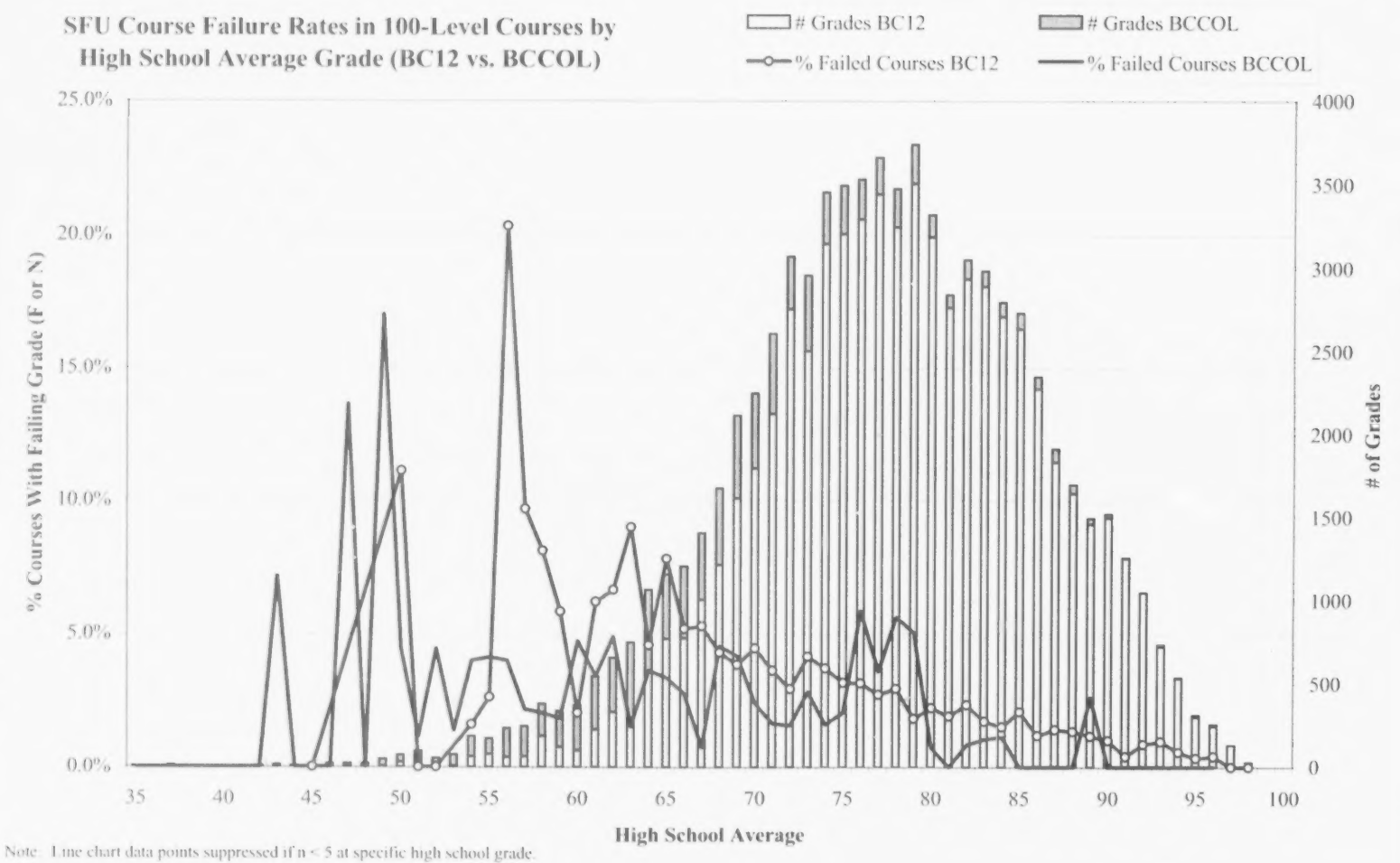

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